REPORT
OF THE
SIXTEENTH INDUSTRIAL EXHIBITION
OF THE
MECHANICS' INSTITUTE
SAN FRANCISCO

PROPERTY OF
MECHANICS' INSTITUTE

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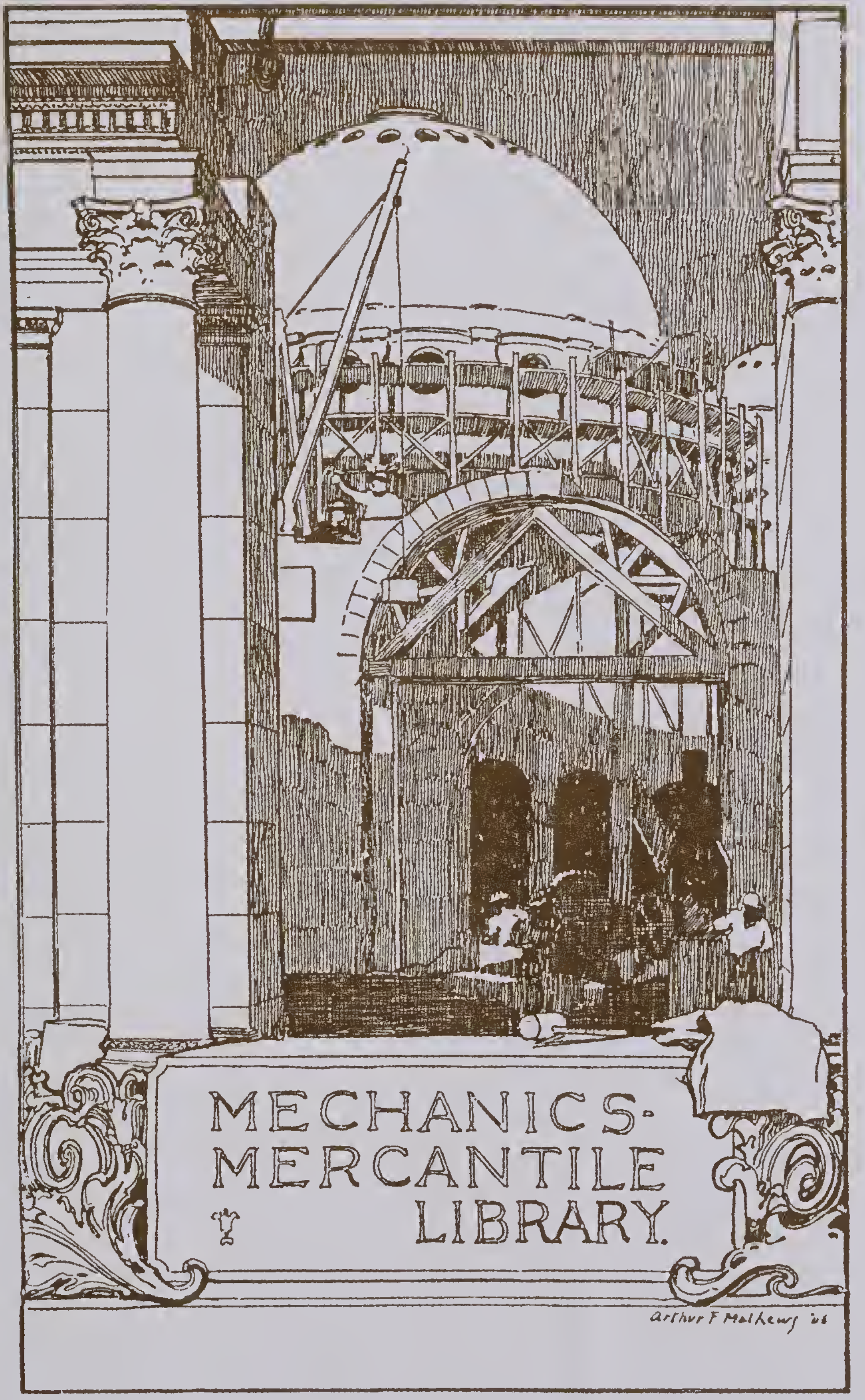

REPORT

OF THE

Sixteenth Industrial Exhibition

OF THE

MECHANICS' INSTITUTE

OF THE

CITY OF SAN FRANCISCO,

HELD AT THE

MECHANICS' PAVILION, FROM THE 2D DAY OF AUGUST, TO THE 10TH DAY OF SEPTEMBER, 1881.

SAN FRANCISCO:
P. J. THOMAS, PRINTER, 505 CLAY STREET
1881.

MECHANICS' INSTITUTE

Library and Reading Room,

27 POST STREET,

SAN FRANCISCO, CALIFORNIA.

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The Reading Room is large, well lighted, and supplied with the principal Papers and Periodicals published here and abroad, and is open every day from 7 A. M. to 10 P. M.

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The Trustees invite your inspection of the Library and Reading Room.

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BOARD OF MANAGERS

OF THE

SIXTEENTH INDUSTRIAL EXHIBITION,

MECHANCIS' INSTITUTE,

1881.

P. B. CORNWALL, President.	Office Black Diamond Coal Co. S. E. cor. Spear and Folsom sts.
A. W. STARBIRD, Vice-President	101 Market street
J. A. BAUER, Treasurer,	101 Post street
RICHARD GRAY,	C. P. R. R. Building, Fourth and Townsend streets, Room 25.
C. WATERHOUSE,	29 and 31 Fremont street
JAMES DRURY,	1039 Market street
A. R. WELLS,	Mechanics' Mill, cor, Fremont and Mission street
JAMES SPIERS,	135 Fremont street
DAVID KERR,	49 Beale street
SAMUEL DINSMORE,	142 Fremont street
J. R. WILCOX,	Cal. Savings and Loan Society N. W. cor. Powell and Eddy sts
GEO. H. HOPPS,	429 Pine street
EDWIN FRETWELL,	218 Fremont street
GEO. SPAULDING,	414 Clay street
J. H. CULVER, Secretary,	Office of the Exhibition, 27 Post street
J. H. GILMORE, Superintendent,	27 Post street

STANDING COMMITTEES

—OF THE—

SIXTEENTH INDUSTRIAL EXHIBITION,

1881.

Auditing.	WATERHOUSE,	KERR,	GRAY
Building.	DRURY,	WELLS,	WILCOX
Circulars and Classification.	FRETWELL,	HOPPS,	SPIERS
Printing and Advertising.	SPAULDING,	FRETWELL,	GRAY
Power and Machinery.	SPIERS,	DINSMORE,	WILCOX
Rules, Regulations and Awards.	DINSMORE,	SPIERS,	BAUER
Tickets and Admission.	WELLS,	KERR,	FRETWELL
Music and Decorations.	BAUER,	STARBIRD,	HOPPS
Privileges.	KERR,	STARBIRD,	WATERHOUSE
Location.	STARBIRD,	SPAULDING,	DRURY
Police.	GRAY,	DRURY,	SPAULDING
Horticulture.	HOPPS,	WATERHOUSE,	BAUER
Gas and Water.	WILCOX,	WELLS,	DINSMORE
Art.	HOPPS,	BAUER,	GRAY

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REPORT OF THE BOARD OF MANAGERS

OF THE

SIXTEENTH

INDUSTRIAL EXHIBITION,

OF THE

MECHANICS' INSTITUTE, 1881.

TO THE TRUSTEES AND MEMBERS OF THE MECHANICS' INSTITUTE :

The Board of Managers of the Sixteenth Industrial Exhibition herewith most respectfully submit to you a report of this year's Exhibition, and the last that will be held in the present Pavilion.

The particulars of the purchase of land, the sale of the old and the erection of a new building, is given in the President's Report, published in this volume.

It is with pardonable pride that we call your special attention to the Report of the Finance Committee, which shows the large sum of $22,269.62 as having been turned over to the Institute as the clear profit of the Exhibition—a result most gratifying, considering the times and the many disadvantageous circumstances under which we labored.

A few statistics regarding the Fairs in the building just demolished we deem proper, at this time, that you may know to what extent the Institute's prosperity is due to the material aid derived therefrom.

The Pavilion was built in 1874, the money for the commencement of its erection, to the extent of $46,250, and material, valued at $6,280.75, being obtained from our prominent public-spirited citizens as loans without interest, to be repaid from receipts of future fairs. Subsequently $20,000, drawing interest, was obtained on the joint note of the Managers, who assumed the liability, making the total amount of borrowed money $72,530.78.

The expenses in 1874 were: For building, $77,379.03; fitting and decorating, $28,951.58; running expenses, $25,464.09; discount, interest and insurance, $2,193.46; making a total of $133,988.16. The receipts for the fair were $84,684.26, leaving a deficiency of $49,303.90.

The next year, 1875, the total receipts of the fair were $90,058.25. The running expenses, alterations and fitting up of the building, including the erection of the Horticultural Garden and painting the Pavilion, amounted to $56,227.96, leaving a net profit of $33,830.29.

A further loan of $10,799.25 for necessary expenses previous to the opening had been incurred on the joint note of the Managers, which, with $23,466.13 of previous loans, were paid this year, and $5,316.06 donated to the Institute, leaving at the end of the Tenth Exhibition an indebtedness of $29,064.65. The net gain of this Fair, as before stated, was $33,830.29.

The revenue from the Eleventh Exhibition, 1876, was $57,009; expenses, $31,892.01, leaving a profit of $25,116.99.

The debt was reduced this year to $8,549.28.

The fair of 1877 commenced August 7th and closed September 22d. Receipts, $58,993.70. The expenses this year were very heavy, being for fitting and furnishing, $12,137.10; running expenses, $24,465.43; contingent expenses $10,584.52—a total of $47,187.05; leaving a profit of $11,806.65, of which $4,000 was transferred to the Institute, and the balance used toward the payment of the indebtedness, which had been increased by sundry items of necessary but unforeseen expenses to an amount considerably in excess of what was anticipated.

October 30th, the Board of Managers transferred and assigned to the Mechanics' Institute the Pavilion, with all its appurtenances, and valued at $114,646.25, which were formally accepted December 6th, 1877.

In the early part of the year 1878, the matter of our Exhibition by the Institute was considered; but owing to a violent dissension that had arisen among its officers and members, the prospect of an Exhibition was slim indeed, as at a meeting held July 9th, it was decided, by a vote of eight to six, *not* to hold a Fair, as had been previously announced; but at the last moment a better feeling prevailed, and by the earnest and active efforts of the Managers, particularly of H. S. Smith, since deceased, harmony was restored, and by energy and hard work the Exhibition opened to the public August 13th, and continued five weeks.

The total receipts were $41,145.55, and expenditures $20,904.24 leaving a profit of $20,241.31, of which $6,343.13 was expended for payment of debts incurred by former Exhibitions, and the balance, $13,898.18, for the benefit of the Institute.

The Fair of 1879 remained open six weeks, the receipts amounting to $40,040.36, expenditures to $22,933.24. Fifteen thousand dollars was transferred to the Institute this year, and a balance of $2,107.12 reserved for coming expenses.

The Fair of 1880 continued five weeks: receipts, $41,146.05, expenses, $27,271.33; transferred to the Mechanics' Institute, 13,874.72.

The Fair of this year has been a financial success, the receipts being $43,988.89, the expenses $21,719.27, leaving the sum of $22,269.62 to the credit of the Institute.

The result to the Institute of the Fairs in the late Pavilion has been the receipt of $60,483.86 in cash, and the building, engine and fixtures valued October 1st at $40,000.00, making a grand total of revenue derived from the Industrial Fairs since August, 1874, of $100,483.86.

The value and benefit to this city and community of these annual Exhibitions is hard to estimate by dollars and cents; for if a correct estimate was made, the sum would seem fabulous. But taking the higher and broader view, what has been the result? In the first place it has given impetus to inventions, stimulated manufactures in a praiseworthy endeavor to excel and place before the people the best specimens of their handicraft, thereby making their name and fame known throughout the world; and to-day the stamp of "California-made" is recognized as a mark of excellence in any market.

Many an invention and process that, to-day, is doing service in every part of the United States, first saw the light in a practical manner at the Mechanics' Pavilion.

Visitors from the Eastern States and foreign lands have been filled with wonder and surprise at our advancement in Art, Science and Manufacture, as gathered in our Fairs; and the natural products of cereals, fruits and vegetables displayed have increased themselves a thousand-fold by stimulating immigration and their production; and our own citizens have been surprised and amazed at the advancement made in the manufacture of articles of necessity or luxury, as seen for the first time at these Fairs, but whose factories are in our very midst.

The Managers have ever deplored their inability to offer such cash premiums for new inventions, processes or manufactures as would be of material benefit and assistance to worthy exhibits. We think if the State Legislature would place in the hands of the Institute, or a suitable committee, a yearly appropriation to be awarded at their Fairs, for worthy exhibits, it would be of vast benefit, and return itself to the State ten-fold.

An itemized account of expenditures and other matters of interest will be found in the reports of the various Standing Committees.

Trusting our labor will meet your approval, and the future of the Institute, and the Fairs connected therewith, be to this community an element of education, of progress and advancement to our fellow-men, we remain, most respectfully,

THE BOARD OF MANAGERS.

TREASURER'S STATEMENT OF TICKETS SOLD, AND RECEIPTS AT THE DOOR.

MECHANICS' INSTITUTE, September 12th, 1881.

To the President and Board of Managers of the Sixteenth Industrial Exhibition:

GENTLEMEN: I herewith submit my Report of the Receipts at the door, on account of the Sixteenth Industrial Exhibition, showing each class of tickets sold.

1881.	DOUBLE SEASON TICKETS.	SINGLE SEASON TICKETS.	CHILDREN'S SEASON TICKETS.	APPRENTICES' SEASON TICKETS.	ADULT SINGLE ADMISSION TICKETS.	CHILDREN'S SINGLE ADMISSION TICKETS.	AMOUNT.
August 2..........	199	36	24	....	227	28	$1,259 50
“ 3..........	159	25	55	....	365	34	1,143 50
“ 4..........	114	22	17	2	361	63	860 75
“ 5..........	130	15	16	....	440	54	952 50
“ 6..........	198	25	30	1	1498	298	1,935 00
“ 8..........	79	15	11	6	704	76	836 50
“ 9..........	72	12	3	4	861	127	868 75
“ 10..........	54	5	4	1	963	98	798 50
“ 11..........	72	5	6	2	....	....	387 00
“ 12..........	36	7	4	2	1019	156	758 50
“ 13..........	55	8	5	3	3713	1067	2,434 25
“ 15..........	14	1	2	....	1017	172	627 50
“ 16..........	14	2	1	....	1150	125	683 75
“ 17..........	5	....	1	1	1289	136	706 50
“ 18..........	6	1	1	1	1222	138	681 50
“ 19..........	16	2	1	1	1385	220	836 50
“ 20..........	11	3	....	....	4652	1302	2,715 50
“ 22..........	3	3	....	....	954	130	533 50
“ 23..........	1	....	....	....	1176	141	628 25
“ 24..........	1	....	....	....	1229	116	648 50
“ 25..........	1	....	....	....	....	....	5 00
“ 26..........	....	1	1	....	1290	216	703 50
“ 27	1	....	....	....	4458	1238	2,543 50
“ 29..........	....	....	....	....	969	167	526 25
“ 30..........	1	....	1	....	1157	172	628 00
“ 31..........	1	....	....	....	1255	162	673 00
September 1.......	....	....	....	....	1427	206	765 00
“ 2.......	....	....	....	....	1469	292	807 50
“ 3.......	1	....	....	....	3790	1020	2,155 00
“ 5.......	....	1	....	....	572	113	317 25
“ 6.......	....	....	....	....	816	69	425 25
“ 7.......	....	1	....	....	1273	152	677 50
“ 8.......	....	....	....	....	1264	150	669 50
“ 9.......	....	....	....	....	1762	419	985 75
“ 10.......	....	....	....	....	3935	800	2,167 50
	1244	190	183	24	49662	9657	$34,345 75

August 11—Benefit Masonic Board of Relief.........................	$ 650 00
August 25—Benefit Ind. Order Odd Fellows.........................	1,000 00
September 3—98 Excursion Tickets, sold at 25 cts.........................	24 50
Total.........................	$36,020 25

Yours Respectfully,

J. A. BAUER, Treasurer.

ACCOUNT OF TICKETS SOLD, AND BY WHOM.

	Double Season $5 00	Single Season $3 00	Child'n's Season $1 50	Apprentices' Season $1 50	Adult Single Admission 50 cts.	Children Single Admission 25 cts.	Excursion Single Admission 25 cts.	Discount and Commissions.	Amount.
Allen, Mrs. S. K	8							$ 2 00	$ 40 00
Andrews, A	20	5						5 75	115 00
Bauer, J. A	3								15 00
Bauer, J. A., ticket office	1244	190	183	24	49,662	9,657	98	7 50	34,370 25
Braverman. L. & Co	14							3 50	70 00
Browning, J	11							2 75	55 00
Burns, T	2							25	10 00
Cornwall. P. B	6	2		154					36 00
Culver, J. H	38	5						6 25	205 00
Dinsmore, S	18			154				5 50	321 00
Drury, J	19							1 50	95 00
Feldbush, J. H. D	7							1 75	35 00
Fretwell, E	7	3						2 20	44 00
Frey, W. A	3							75	15 00
Gray, R	2								10 00
Hallidie, A. S	6	3							39 00
Hopps, G. H	8	1							43 00
Kerr, D	20	4						5 60	112 00
Kohler & Chase	3	1							18 00
Macdonald, D. A.	9								45 00
Pendergast, Smith & Co	2								10 00
San Francisco Gas Light Co.	10	20							110 00
Sherman, Clay & Co	24	3						6 45	129 00
Spaulding, Geo	13	1						3 40	68 00
Spiers, J.	6								30 00
Starbird, A. W	50	15						10 35	295 00
Steiger & Kerr	5	4							37 00
Stetson, J. B., pr W. Brown.	18	1						4 65	93 00
Waterhouse, C	11							1 75	55 00
Wells, A. R	33	1							168 00
Widber, J. H	10	5						3 25	65 00
Wilcox, J. W	5								25 00
Wilson, H. (at Library)	136	18						4 15	734 00
	1771	282	183	178	49,662	9,657	98	$79 30	$37,512 25

Deduct Commission and Discount.................................... 79 30

Total.. $37,432 95

RECAPITULATION.

1,771 Double Season Tickets @ $5 00		$8,855 00
282 Single " " @ 3 00		846 00
183 Children " " @ 1 50		274 50
178 Apprentice " " @ 1 50		267 00
49,662 Adult Single Admission Tickets @ 50 cts		24.831 00
9,657 Children " " " @ 25 cts		2,414 25
98 Excursion Tickets @ 25 cts		24 50
		$37,512 25
Benefit Masonic Board of Relief		650 00
Benefit Ind. Order Odd Fellows		1,000 00
Excursion Tickets sold by Secretary		41 00
Deduct:		$39,203 25
Discount on 3 D. S. Tickets in office	$ 7 50	
Commissions	71 80	
Cash returned on tickets unsold	8 00	
		87 30
Net Total		$39,115 95

ASA R. WELLS,
DAVID KERR,
EDWIN FRETWELL,
} Ticket Committee

REPORT OF FINANCE COMMITTEE.

EXPENDITURES.

ADVERTISING—Abend Post	$ 14 00	
Alta	38 50	
Argonaut	10 00	
Argus	5 00	
Brown, D., City and Interior Papers	110 00	
Bulletin	58 00	
Cal. Demokrat	14 00	
Cal. Journal	4 00	
Call	65 50	
Cheever, S. G., sundry weekly papers	21 00	
Chronicle	54 00	
Courrier de San Francisco	10 00	
Daily Report	27 50	
Dewey & Co., Scientific and Rural Press and Fair Daily	150 00	
Dunphy, T. N. & Co., Bill Posting	90 50	
Eary, W. B., Signs	26 00	
Elevator	3 00	
Examiner	62 50	
Figaro	12 50	
Footlight	3 00	
Garzynski, E. R.	200 00	
Hebrew Observer	8 00	
Hotel Gazette	12 50	
Humorist	4 00	
Jewish Progress	4 00	
Jewish Times	4 00	
Johnston, J. E	25 00	
Journal of Commerce	19 00	
Law Journal	10 00	
News Letter	10 00	
Pathfinder	3 00	
Post	59 00	
Resources of California	5 00	
Stock Exchange	7 00	
Spirit of the Times	10 00	
Trade Herald	5 00	
		$1,164 50

ART DEPARTMENT—	Bachman Bros., Drapery	$ 93 08	
	Briderson, W., Cartage on paintings	25 00	
	Butler & Haldan, Insurance	100 60	
	Callingham, W. J., Insurance	108 00	
	Corrinson, J., Labor	23 00	
	Cohn, H., Labor	31 00	
	Davis, J. A., Labor	5 00	
	Eary, W. B., Signs and Varnishing	45 00	
	Finnigan, T., Labor	20 00	
	Gish, Ellison, Labor	18 75	
	Gump, S. & G., Labor and Cord	3 20	
	Helmken, J. T., Hardware	9 10	
	Hughes, J., Labor	2 50	
	Hutchinson & Mann, Insurance	368 50	
	John, Labor	2 50	
	Jorgensen, J., Labor	5 00	
	Martin, J. R., Services as Superintendent	200 00	
	Masseth, M.. Moving paintings and statuary	102 00	
	Paul, Labor	7 50	
	Royal, Norwich, Union & Lancashire Ins. Co., Insurance	14 70	
	Secretary, Petty Expenses	7 00	
	Shaw, W. J., Storage, cartage and labor	29 75	
	Stanton, J. A., Labor	10 00	
	Short, David, Horse and Buggy for Sup't	10 00	
	Vanni, N., Labor	38 50	
	Wells, Russell & Co., Mouldings	12 00	
			$1,291 68
BUILDING—	Cal. Wire Works, Wire for Elevator	$ 3 75	
	Doerrer, W. G., Glass and Glazing	18 55	
	Eary, W. B., Painting and Whitening	25 75	
	Joost Bros., Hardware	16 40	
	Rosekrans, H. & Co., Hardware	28 31	
	Salaries, Carpenters	355 74	
			$448 50
DECORATION—	Bass, T. J. & Co., Copper Foil	$ 3 15	
	Eary, W. B., Bronzing Statuary, Painting, etc.	124 75	
	Holmes, H. T., Lime and Marble Dust	3 75	
	Petersen, L., Spear Heads	3 00	
	Salaries, Decorators	139 75	
	Secretary, Petty Expenses	1 25	
	Strauss, Levi & Co., Cambric	95 41	
			$371 06

EXPENSE—Brophy, M., Horse and Buggy 21 days	$ 42 00	
Cal. Electrical Works, Repairs to Electrical Apparatus	22 00	
Cal. Wire Works, Wire Cloth	1 65	
Ciphers & Gendar, Damage to Candy	9 46	
Coffin & Hendry, Rope	1 95	
Coursen, Ellen, Services at Opening Exercises	25 00	
Dowling, R., Carriage Hire Opening Exercises	9 00	
Doerrer, W. G., Painting Landscapes	45 00	
Figer Bros., Dusters and Brooms	19 50	
Frankie, Louis, Removing Dirt	13 25	
Garratt, W. T., Cleaning and Cartage on Articles Loaned	37 50	
Gilmore, J. H., Cartages	3 25	
Hallidie, A. S., Steel Wire for Bridge	43 77	
Harper, L., Repairing Chairs	22 50	
Hinkle, Philip, Running Elevator	140 00	
Joost Bros., Hardware	9 37	
Klinkner & Co., Stamp for Treasurer	6 00	
Miller, J. M., Rent of Show Cases	19 00	
Mitchell & Hobe, Carpet Cleaning	8 46	
Monier, G., Refreshments for Invited Guests	26 00	
Morrow, Flying Machine	52 75	
Pacific Bell Telephone Co., Use of Telephone	55 60	
Rodgers, H., Rent and Expenses of Opera House for Opening Exercises	136 25	
Secretary, Petty Expenses at the Exhibition	66 05	
Sheplar & Co., Letters and Figures for Ticket Office	5 50	
Smadeke, W., Refreshments for Invited Guests	16 00	
Tubbs & Co., Rope	17 44	
Waters, M., Lettering Board for Election Returns	8 00	
Wells, Russell & Co., Lumber and Mill Work	132 91	
Willey, J. F., Watering Street	35 00	
		$1,030 16
HORTICULTURAL DEPARTMENT—Bass, T. J. & Co., Tin and Copper Foil	$ 3 75	
Eary, W. B., Signs and Painting	12 00	
Flynn, T. P. & Son, Barley	1 25	
Gilmore, J. H., Paid for Fruit	57 30	
Harding, Brann & Co., Repairing Canvas	36 00	
Heathorn, Labor	35 00	
Carried forward	$145 30	

Brought forward	$145 30	
Meyer, E., Cut Flowers	66 00	
Neville & Co., Putting on Canvas Cover	100 00	
Pryal, Labor	35 00	
Saywell, Thos., Plants and Flowers	38 00	
Saywell, Thos., Labor	30 00	
Secretary, Petty Expenses	1 50	
Trueworthy, A., Calcium Light for Fountain and Cascade	315 00	
		$730 80
LIGHTING—Cal. Electric Light Co., Electric Lights	$ 315 00	
Doerrer, W. G., Repairing Outside Lamps	4 50	
Dunham, Carrigan & Co., Gas-fitting Goods	27 08	
G. Nehemiah Grubb, Gas-fitting	22 00	
Mueller, T. W., Blacksmithing	11 25	
Salaries, Gas-fitting and Labor	375 75	
San Francisco Gas Light Co., Gas, 1,167,300 feet at $3 per M	3,501 90	
		$4,257 48
MACHINERY—Black Diamond Coal Co., Coal and Screenings	$ 301 80	
Dunham, Carrigan & Co., Sundry Items for Engineer	20 07	
Eary, W. B., Painting Pumps, etc	12 00	
Garratt, W. T., Fittings, etc	21 91	
Goodyear Rubber Co., Belting	19 50	
Hinckley, Spiers & Hayes, Labor and Materials for Machinery Department	108 78	
Iredale, A. S., Repairing Steam Pipe	2 50	
Mendel, T., Repairing Brickwork	16 00	
Petersen, L., Work on Small Locomotive	13 10	
Secretary, Petty Expenses	4 25	
Whittier, Fuller & Co., Alcohol	12 00	
Yates & Co., Alcohol	34 50	
		$566 41
MUSIC—Schultz, Charles, Music five and five-sixths weeks, at $458 per week, and $16 extra for Opening Exercises		$2,687 67
PREMIUMS—Wenzel, Rothchild & Hadenfeldt, Medals	$ 90 00	
C. Eisenschimel, Filling out Certificates	10 00	
		$100 00

PRINTING—Barry & Baird, Cards	$ 4 00	
Bartling & Kimball, Order and Receipt Books	22 50	
Cubery & Co., Notices	2 75	
Eastman, Frank & Co., Tickets	80 75	
Galloway, W. T., Lithograph & Season Tickets	58 00	
Francis & Valentine, Posters	56 00	
Murdock, C. A. & Co., Invitations and Tickets	60 25	
Secretary, Petty Expenses	14 00	
Sterrett, B. F., Cards and Gas Reports	33 00	
Thomas, P. J., Catalogues for Art Gallery	262 50	
Thomas, P. J., Report 16th Exhibition	276 50	
		$870 25

SALARIES—Superintendent, Secretary, Janitor, Engineer, Clerks, Watchmen and Laborers		$7,502 46

STATIONERY—Bancroft, A. L. & Co., Stationery	$ 8 65	
Langley, H., Directory	5 00	
Payot & Co., Stationery	4 20	
Secretary, Stamps and Petty Expenses	40 95	
Wilson, Horace, Stamps	56 15	
		$114 95

WATER--Spring Valley Water Works, Water five and five-sixths weeks, at $100 per week		$583 35

RECAPITULATION OF EXPENSES.

Advertising	$1,164 50	
Art Department	1,291 68	
Building	448 50	
Decorations	371 06	
Expense	1,030 16	
Horticultural Department	730 80	
Lighting	4,257 48	
Machinery	566 41	
Music	2,687 67	
Premiums	100 00	
Printing	870 25	
Salaries	7,502 46	
Stationery	114 95	
Water	583 35	
		$21,719 27

PROFIT AND LOSS.

REVENUE—Admissions, Season and Single Tickets	$39,115 95	
Rebate on Gas by S. F. Gas Light Co.	583 65	
Sale of Gas	20 04	
Sale of Catalogues	204 20	
Sale of Privileges	3,977 75	
		$43,988 89
EXPENDITURES—As given above	$21,719 27	
Transferred to Mechanics' Institute	22,269 62	
		$43,988 89

Respectfully submitted,

C. WATERHOUSE,
DAVID KERR,
RICHARD GRAY.
Finance Committee.

PRELIMINARY ANNOUNCEMENT.

The following Circular was prepared by the Committee on Circulars and Classification, and issued in April:

SIXTEENTH INDUSTRIAL EXHIBITION

OF THE

MECHANICS' INSTITUTE.

The Board of Managers have the honor to inform exhibitors and the public generally that the Sixteenth Industrial Exhibition of the Mechanics' Institute of San Francisco will open on Tuesday, August 2d, and, after continuing four weeks and four days, will close on Saturday, September 3, 1881.

The Managers offer to exhibitors upwards of 175,000 square feet of floor space, where every article, useful, rare or beautiful, may be advantageously displayed without charge for space. Every facility is given to exhibitors of machinery to show the same in motion, and steam power and water are furnished free when required.

The great extension of railroads on the Pacific Coast, the vast development of the mining interests of Arizona, and the agricultural resources of Oregon that have taken place during the past two or three years, have wonderfully increased the dignity and importance of San Francisco as the business centre and metropolis of the Pacific Slope. As a consequence of this, the Industrial Fairs of the Mechanics' Institute give to exhibitors an unequalled opportunity of bringing their goods under the notice, direct and personal, of the people of the entire Coast.

Visitors in search of amusement or instruction will find an immense variety of objects of interest. In the Machinery Department the latest improvements in Mining and Agricultural Machinery may be studied—the machines in running order, and most of them in actual operation. In the Art Gallery will be hung the masterpieces of our most celebrated Californian artists, as well as specimens of the work of Eastern and European painters, from the private galleries of our citizens. This department has always been exceedingly popular, the Gallery being a spacious well-lighted apartment, specially adapted to the display of pictures. In the Horticultural Garden will be collections of ferns and rare exotic plants, tastefully arranged, with choice collections of cut flowers and flowers in pots. A special effort will be made this year to worthily exhibit the fruits and wines of California.

A fine band of music will add to the enjoyment of visitors every afternoon and evening during the Fair.

Goods arriving before the opening of the Exhibition will be stored free of charge.

Blank applications for space, a copy of the Rules and Regulations, and any other desired information will be given on application to the Secretary, J. H. Culver, or the Superintendent, J. H. Gilmore, 27 Post street.

By order of the Board of Managers,

P. B. CORNWALL, President.

RULES AND REGULATIONS

OF THE

SIXTEENTH

INDUSTRIAL EXHIBITION.

1881.

THE Pavilion will be open for the reception of goods on Monday, July 22d. The Exhibition will be open to the public on Tuesday, August 2d, at 7 o'clock P. M.

Applications for space should be made as soon as possible, and not later than July 25th, stating character of exhibit, amount and kind of space required —wall, table or floor. Blanks will be furnished for this purpose. All articles must be in place not later than August 6th.

Space allotted and not taken possession of by August 6th may be assigned to others. The height of exhibits, on the main floor, must not exceed six feet for opaque objects, nor ten feet for glass or signs. On the partitions, outside walls, and other parts of the building, where light nor view will be obstructed, all the height desired can be taken.

If glass cases are used, state their size, height, and particulars of the exhibit. This is important on account of light.

In the Machinery Hall no rule can be given.

The shaft is 2 15-16 inches in diameter, has sufficient 30-inch pulleys for all requirements, and makes about 110 revolutions per minute.

The Art Galleries are lighted by skylights, with an unobstructed wall space from ceiling to floor.

All persons presenting articles for exhibition must have them registered by the Receiving Clerk, who will give a receipt for the same, which receipt must be presented when the articles are withdrawn, at the close of the Exhibition.

Articles intended for sale may be labelled accordingly, but cannot be removed until the close of the Exhibition, except by written permission of the Managers.

No charge of any kind will be made to exhibitors for space. Steam and water will also be furnished free in reasonable quantities.

Every facility possible will be given to exhibit working machinery to the best advantage.

The name of every article must be attached by the exhibitor to it.

Perishable articles will be received or may be removed at any time during the exhibition, with the consent of the Managers.

The most effectual means will be taken, through the agency of the Police and otherwise, to guard and protect the property on exhibition; and it will be the purpose of the Managers that all articles shall be returned to the owners without loss or injury. Still, all articles deposited will be at the risk of the owners.

Space will be awarded as early as practicable (after the application has been received), consistent with the proper arrangement of the goods.

All articles arriving too early will be stored free of cost to the exhibitor, and the Managers will have them duly placed in proper position for exhibition. No freight charges will be paid by the Managers.

The Board reserves the right to exclude from the Exhibition all things they deem objectionable, as nostrums, articles of an explosive, inflammable, dangerous, or offensive character.

THE OPENING EXERCISES.

The Opening Exercises took place at the Grand Opera House Tuesday afternoon, August 2d, to a large and appreciative audience. The arrangement of the building for the comfort and safety of those present had been carefully attended to by Mr. H. Rodgers, the lessee, and the following programme, as prepared by the Committee on Literary Exercises, Messrs. Wells, Waterhouse and Spiers, was satisfactorily rendered, from the opening Overture by the band to the grand tableau of "Mechanic Art" which closed the ceremonies:

PROGRAMME.

1. Grand Opening Overture—*Von Suppe*.......................... Orchestra
   Prof. Chas. Schultz, Leader.
2. Introductory Remarks .. ..P. B. Cornwall
   President of the Mechanics' Institute.
3. Monastery Bells—*Michaelis*........ ....Orchestra
4. Prayer............... ....Rev. Dr. T. K. Noble
5. Ballad—"Brown-eyed Nell"—*Joseph Roeckel*,....Miss Ellen Coursen
6. Poem—"San Francisco,"...Written and read by Miss Clara Dolliver
7. "The Geyser March"—*Chas. Schultz*,........ ....Orchestra
   (First time.)
8. Oration.......... ....Hon. W. W. Morrow
9. Prelude and Star Spangled Banner—*Francis Key*..Miss Ellen Coursen
10. Grand Tableau of Mechanic Art.

At 2 p. m. P. B. Cornwall, President of the Mechanics' Institute and of the Board of Managers, came forward and made the opening address.

ADDRESS BY THE PRESIDENT.

I do not propose to occupy more than five minutes of your time in complying with the custom which requires the President of the Mechanics' Institute at the opening of each of its Industrial Exhibitions to present a few brief remarks pertinent to the occasion. I will begin by saying that the chief objects, for the accomplishment of which the Institute was founded, were:

To establish and maintain a permanent and circulating library of useful and valuable books. To inaugurate and support lectures and classes for instruction in Mechanics and the Sciences. And to hold from time to time Fairs or Industrial Exhibitions, not like the Fairs of some parts of Europe, as places for barter and sale, but to enable those who have acquired particular skill and excellence in old methods, and those who have invented new machines or methods of construction or manipulation, to exhibit and compare their achievements, that committees of experts may award prizes to those who have made the greatest progress; and, particularly, by exhibition, examination and competition, to encourage and promote continued progress toward the greatest excellence in mechanics and manufactured articles, and to extend and increase the information of the general public on these and kindred subjects.

It is twenty-six years since the Mechanics' Institute was organized, and twenty-four years since its first Fair was held, on the ground now occupied by the Lick House, on the corner of Sutter and Montgomery streets, which was then on the outer edge of the city, in the sand hills, beyond the limit of paved streets and sidewalks.

The superficial floor space of the first Fair building was 20,000 feet—that of the present building is 190,700 feet, being more than 9½ times greater than the first; and it may be fairly said that the increase in numbers, variety, usefulness and excellence of articles exhibited from San Francisco manufactories is in greater proportion than the increase of space for exhibition.

The growth and enterprise of the Institute, with its library, its lectures, and its Industrial Fairs, has been fully up with the growth and progress of the city.

Its exhibitions are self-supporting, and, besides their mechanical and educational advantages, they supply an agreeable and much needed centre for social promenade, with excellent music, extensive art galleries and beautiful pictures.

By actual count, over 590,000 persons have passed in at the doors during a single Fair, and it is believed that the fifteen Fairs which have been held have each brought to the city from other parts of the State at least 12,000 persons, who have expended an average of $10 each at stores and hotels, making a total sum of $1,800,000 thus put in circulation here within the past twenty-four years.

The library of the Institute, containing over 30,000 volumes, principally of rare and valuable books, is constantly replenished with *current new* publications on all subjects.

The Mechanics' Institute is the only Association in this city or State that provides every year a course of free public lectures on literary, scientific, mechanical and historical subjects by able scholars.

Finally, it is a live, self-supporting institution. Its membership is so cheap as not to be a burden to any one. Its members are men and women of the scholarly, professional, mercantile, mechanical and laboring classes; but are most largely composed of the great reading, thinking, working middle class, who plan and build, who mine, forge, hammer and rivet in times of peace, and are of such as, when the occasion comes, in times of peril, shoulder the musket or draw the sword in their country's defense; some of them have experienced the privations, hardships and weary marches of tedious campaigns—have honorably fought in bloody battles of awful war, and are now most peaceful but earnest workers for our Mechanics' Institute, and the good it is trying to accomplish. We invite you all to become members of the Institute.

"Monastery Bells," by the orchestra, was played in a faultless manner—and listened to by the audience with great attention.

The Rev. Dr. T. K. Noble then made an earnest and impressive prayer, invoking Divine aid and blessing upon the coming Exhibition, that its influence might be for the advancement of Christianity, of knowledge and of good-will to our fellow-men.

Miss Ellen Coursen then sang with good feeling and expression, "Brown-eyed Nell," which was heartily applauded by the audience, and an encore demanded.

The poem for the occasion, "San Francisco," written by Miss Clara Dolliver, was delivered by the talented authoress with fine elocution, and, at its conclusion, received long and hearty applause.

SAN FRANCISCO.

Young city of a proud new world,
Kissed by the waters of a sea
Which hath its bounds of mystery;
But whose far western wave is curled
By palace-stones, whose history
Was old when Rome's rude wall was young—
Who shall foretell your destiny?
The time-worn, and the stripling face!
The Orient, cradle-land of art,
Greybeard of nations, weary, wrung
With the misery of its selfish heart,
Is feverish with its teeming race!
And you stand proudly by the sea,
So strong, and fresh, and brave and free,
Sending your white-winged argosy
With precious wealth of golden grain,
To that old world across the main
Whose starving nations cry to thee:
"Most happy land beyond the sea,
"More blest your treasures of the field
"Than all the gold your mines can yield!"

O fair young city, you are crowned
With nobler wreaths than ever bound
The victors of the olden time!
Your laurels are unstained of blood!
In your memorials may be found
Strange tales of fright, and fire, and flood;
Of heroes black with smoke and grime;
Of lofty deeds scarce understood,
And unremembered, but sublime!
Of romances of darker days,
The days of lawlessness and crime,
That dragged your name in hideous ways,
Until your own heroic hand
And upward struggle, without cease,

Have given you the right to stand
Among the proudest in the land,
And claim the victories of peace!
Your sons, our city, know the word
That opens ev'ry door—the name
Of that great goddess who has stirred
The blood of all mankind, to fame,
To honor, wealth, in every age—
Labor! From kings upon their thrones,
And scholars stooping o'er the page
In midnight toil, to peasants bent
Beneath the burden of their groans,
Is labor still salvation. Drones
Taste of a bitter discontent;
Though titled princes, they are weights
That drag upon the steps of States.
To-day is Labor's *festa!*—down
Where smoking incense clouds the street,
Where engines shriek and anvils beat
With thund'rous noise her triumph-song,
Her knights, with brawny arms, and strong,
Have forged for her an iron crown!
We cast our off'rings at her feet,
Varied as human souls. The thought
That almost flies the poet's pen;
The marvels patient hands have wrought;
The skillful touches of the brush
That make the tender morning flush
The purple mountain-tops again;
The crushing mill, the whirling wheel,
The ponderous hammer, and the wires
That fetter Earth with bands of steel
And prison Heaven's immortal fires.

Oh, brave young city! raise on high
Your banners, blazoned "Industry."
For those who 'neath that standard fight,
Can lift a mighty arm for right,
And home and country in its need;
For whoso battles day by day,
Where tares and briars set the way,
Loves home and Liberty, indeed,
And faces death without dismay.
We *love* you, O, our city! We
Have seen your stately streets arise
As if by magic from the sand;

We love your deathless energy,
Your courage, and your enterprise;
Your ever-open, generous hand;
And though we wander far, our own,
And search the dim old world, our true
Hearts ever backward turn
To linger with our distant home.
The cord you touch is never dumb;
Your children all come back to you;
The laurel fades by Athens' streams,
But buds anew by yours; and we,
Who love you, guess your destiny,
And hail you proudly in our dreams—
Another Athens by the sea!

After music by the orchestra, came the able and eloquent

ORATION BY HON. W. W. MORROW.

A distinguished English visitor, after six weeks of travel in the United States, recently arrived in San Francisco.

He was, of course, duly welcomed, and asked the usual question as to his opinion of the country and its institutions. His reply was a candid confession that he did not feel competent to pass judgment on the affairs of a country based upon observations made from the window of a railroad car.

The embarrassment of our English friend can be fully appreciated by any one who will attempt to gather and arrange statistics concerning our present progress in the mechanical arts and mechanical and agricultural productions. We are speeding along so rapidly, through depressions and over altitudes, that broad fields of facts, on either side of us, drift away before we can note their character or determine even their location.

The careful and conscientious student desiring to determine accurately the value of these vast industrial fields, must stop and proceed patiently and systematically to investigate details before he can render a judgment that shall comprehend all the elements that go to make up the material wealth and prosperity of a country.

Happily no profound discussion of any question in which you, as friends of the Institute, are interested, is called for on this occasion. I shall therefore content myself with a few obvious comparisons and illustrations to prove, what everybody already knows, that we are in the midst of progress and that he future is full of promise.

THE MECHANICS' INSTITUTE.

I learn from the reports of the officers of the Mechanics' Institute that it was founded on the 6th day of March, 1855, and that the first Exhibition held under its auspices was inaugurated on the 7th day of September, 1857.

In the announcement made by the Managers of the Institute some time previous to the first Exhibition, the influence of the proposed enterprise was expressed in strong and hopeful language. It was said: "The advantages of Fairs must appear obvious to every reflecting mind; and in no quarter of this globe do they promise more than in California, where so much may be accomplished by the dissemination of correct information relative to her natural and artificial resources. Besides exciting emulation, extending practical knowledge, suggesting ideas to ingenious minds, affording tangible evidence of superiority, stimulating talent, exhibiting the progress of arts, promoting extensive intercourse among producers and their patrons, they cannot fail to excite a world-wide interest in regard to our State and extend reliable information respecting its resources, which will tend to encourage immigration and permanently establish beneath our genial skies an industrious, enlightened, prosperous and happy population."

It is pleasant now to note the sanguine expectations of the originators of these splendid Exhibitions and know that they have been more than realized. And the occasion of the opening of this, the Sixteenth Industrial Exhibition, seems a fitting opportunity to consider the progress that has been made in California, and particularly in San Francisco, in the last twenty-four years, in those departments of industry with which this Institute is intimately connected.

PROGRESS OF THE STATE.

In 1857, the excitement caused by the discovery of rich placer mines nine years before in the lower ranges of the Sierras had about run its course with the exhaustion of the surface deposits.

The more restless of the adventurous miners had either departed for their Eastern homes or were searching for new El Dorados.

The Comstock was yet unknown.

It was a period when the future of the State seemed uncertain; but there was a large number of energetic and enterprising young men who determined not to abandon without further trial a country which in their eyes gave promise of a great future.

A few farmers scattered here and there over the State had demonstrated that its broad sunny valleys were capable of producing large crops of grain of all kinds, while fruits and vegetables of every description grew in abundance.

During the year ending July 1st, 1857, a larger crop of wheat, barley and oats had been grown than was necessary for home consumption, and a surplus of less than 40,000 bushels of wheat, 140,000 bushels of barley, and about 26,000 bushels of oats was exported. The wheat found a ready and profitable market abroad. The fact was suggestive, and gave encouragement that while the glory of our mineral wealth might suffer as the product decreased, there was wealth to the soil that would give the State a more enduring and a far brighter fame.

An agricultural community meant an abiding and industrious population requiring manufactures to supply its various and constantly increasing wants. This was the theme of the first Industrial Exhibition held in San Francisco.

THE HARVESTS OF GRAIN.

What has the harvest been? The wheat and flour exports from California since then have reached the enormous figures of one hundred and thirty millions of centals, or the equivalent of more than two hundred and sixteen millions of bushels. The export of wheat last year alone amounted to more than fifteen millions of centals, or twenty-five millions of bushels, while the total production probably exceeded thirty millions of centals, or fifty millions of bushels.

The barley crop for 1880 has been estimated to exceed 5,000,000 of centals; the wool crop at 46,000,000 of pounds, and the wine product at 12,000,000 gallons.

It would weary you to go through the list of productions; but enough has been stated to show how generously the soil and climate have responded to the predictions made twenty-four years ago.

Now, what has the patient, hard-working mechanic been doing all these years? There are no statistics at hand showing the extent of the manufactures in San Francisco in 1857, for this kind of industry was then in its infancy. The Assessor of this city and county reports that the total value of manufactures in San Francisco during the year 1880 was $72,364,680, and that the number of men, women and boys employed was 28,232. This is an increase over the year previous of $2,869,800 in the value of articles manufactured, and 2,671 in the number of men, women and boys employed.

Is it any wonder that the Pavilion used for the first Exhibition, covering less than half an acre and giving floor space of only 20,000 square feet, has given place to the present immense structure, covering more than four acres of ground and furnishing floor space of 190,700 square feet? We are not surprised either when we are told that the present building must give way to still another, and that, before the time comes around for the next Exhibition, a permanent building is to be erected of such grand proportions and architecture as to be at once the pride of the city and the glory of the State.

All honor to the public-spirited gentlemen who founded the Mechanics' Institute! All honor to their successors who have supported and carried it forward to the important position it now occupies, as a substantial power in developing the mechanical industries of the city and State!

THE MASTER OF LIFE.

"Mind acting through the useful arts," says Mr. Everett, "is the vital principle of modern civilized society."

"The mechanician, not the magician, is now the master of life. He kindles the fires of his steam engine, and the rivers, the lakes, the ocean, are covered with flying vessels; mighty chain-pumps descend, clanking and groaning, to the deepest abysses of the coal mines, and rid them of their deluge of waters; and spindles and looms ply their task as if instinct with life. It is the necromancy of the creative machinist." This was said forty-four years ago, and it makes one curious to know what graceful thought would have been suggested to the eloquent orator by the wonderful machinery that now lifts the water from the profound depths of the Comstock lode. How much more, too, would he have been impressed with the great and all-pervading power of the mechanic arts as they have since been developed in all departments of industry?

If we examine the discoveries of the past centuries and compare them with the inventions of our own times, we feel a pride in pointing out where the genius of man has triumphed here and there in solving some great mechanical difficulty; and we are often surprised, when the problem is solved, to find it had not been done before.

The expansive power of steam was known long before Watt put it into the form that has developed into the modern steam engine.

The electric current was known and recognized by the ancients, but who among them ever dreamed of applying it to the uses of to-day—the telegraph, the telephone, the phonograph, or the commercial light?

The principles involved in the power and pressure of water have been more or less understood and utilized for centuries, but it was the modern inventor that adapted those principles to the hydraulic lift, the hydrostatic engine, and the hydraulic nozzle.

And so with innumerable things, in innumerable ways, genius, necessity and opportunity separately and jointly have supplied, improved and invented.

INVENTIVE GENIUS IN CALIFORNIA.

In points of mechanical invention and adaptation, California has no need to feel ashamed of her record; and when we consider that the predominating influences here have not been favorable to deep thought and careful study, except as exigencies have arisen which momentarily commanded concentration of mind, the many evidences of genius among our mechanics and thinking men invoke admiration and satisfaction.

In some of the modern inventions California, perhaps, furnishes some of the best examples that can be found of improvements in the use and economy of forces. This is entirely natural and reasonable, when we remember that our population was not the result of growth upon the soil. We were all Topsys —" Never was born; never had no father, nor mother, nor nothin'. I was raised by a speculator, with lots of others." Our raising seems to have shaped our character. Nature appeared to us strangely accoutered, and to subdue it quickly and effectively we have sought for the best weapons we could find.

A friendly critic said of us, a few years ago, that we appeared like a brand-new people with a brand-new country. He saw no evidences of a former generation. No old people, no ancient places, no antique things, no relics. It was as though in the school of events it had been determined to try the experiment of placing a perfectly clean slate (not a political one) in the hands of a new generation of men, and requiring them, without rule, direction or copy, to work out the sum of all their capacities. With such a people there was no prejudice against new appliances.

The farmer commenced work without old tools, and of course he was anxious to get the best of the new. The miner was obliged to invent new machinery to enable him to search for the hidden treasure, or he must abandon the pursuit. The prize was a glittering one, and he began to think. When a full-grown man, accustomed to toil and struggle, is urged by a powerful incentive to think, he generally goes direct to the point. He may grasp his subject awkwardly, and even fail to comprehend it; but the chances are that he will break through some mystery by force and reach the truth, the road to which will afterward be explained by the scholar on strictly scientific principles.

THE MINERS—ORIGIN OF HYDRAULIC MINING.

The California miners have done wonders in increasing the power of man's agencies in the search for the precious metals.

In 1852 it occurred to a Placer county miner that the pressure of water might be used in working a gravel claim. He accordingly placed a barrel in some convenient place high above the ground he desired to work. Into the barrel he led a small stream of water and made a reservoir. From the barrel to his claim he stretched a hose made of common rawhide, and ending in a four-foot tin tube, the nozzle of which was one inch in diameter. This cheap and simple contrivance proved to be equal to the labor of several men in removing the earth and washing out the gold, and was the origin of what is now known all over the world as hydraulic mining.

The need of a large quantity of water under heavy pressure for this kind of mining has required its conveyance for long distances around mountains and across deep gorges. Here the inventive genius of the miner has enabled him to overcome difficulties which at first seemed insurmountable. The old heavy metal pipe could not well be secured and supported at a great height; but by successive improvements a thin sheet-iron pipe takes its place, and may now be seen suspended across gorges nearly 2,000 feet in depth.

At the mine where the water is used it is now discharged from an ingeniously contrived nozzle, under a pressure that makes the stream as rigid as a bar of steel. It plays with huge bowlders as a child would play with marbles, and yet it is as easily controlled as the water faucet in your chamber basin.

What a marvel of power and convenience has been developed since the first experiment in 1852! But here I am assailed by a distressing doubt. Has all this power and mechanism been entirely beneficial? I fear that it has not. The miner has been expeditious and successful in scouring the hills for gold, but what has become of the mountains of earth he has washed down? This is dangerous ground. It has been said that rivers have been filled up and large tracts of agricultural land destroyed by it. It is also said that under the aggressive name of *debris* it has found its way into the halls of legislation and produced fearful havoc in the political and financial affairs of the State.

If all this is true, we must find either an engineer or politician—if he has not been found already—who will have the genius to follow up the inventions and improvements in this branch of industry with some new and effective device that will make the hydraulic miner an unqualified blessing, or abolish him altogether.

THE QUARTZ MINER.

The quartz miner has also done much in improving the methods and machinery long used for extracting and crushing ores.

For three or four hundred years the ponderous-looking stamps used in the quartz mills of mining countries and brought here when quartz mining first commenced, were bobbing up and down in a most ridiculously ineffective manner. The stamp used was square and had a square wooden shaft, and the whole was lifted by a cam (usually also of wood), working in a long cut in the square stamp-head. Some bright fellow in the mountains, having no reverence for this aged contrivance, gave it new youth and vigor by substituting iron for wood and a cylindrincal shaft and stamp-head for the square apparatus.

He thus simplified the construction of the several parts of the stamp, and then by giving it a rotary motion, made the shoes which crush the rock wear uniformly; and that is your quartz mill of to-day.

This was an exceedingly simple but valuable improvement, and the great wonder is that it was not made before.

As early as 1854, the hydraulic jack was employed by an ingenious mechanic in this city for raising massive buildings. Since then the same method has been used in Chicago and other large cities for a like purpose.

A small stream of water conducted through small pipes to numerous hydraulic jacks has quickly, steadily and silently done the work which would otherwise have required the employment of a large force of men in a slow and dangerous operation.

THE FEATURE OF THE DAY.

The feature of the day, and that which strikes an observer most forcibly, is the application of well-known scientific principles in simple, easy ways for the performance of work about the foundry, the machine shop, the mill or the factory. Turn where you will, and you will find some simple device which solves a problem, the solution of which has cost hours of thought and patient application. So simple and obvious are many of these modern scientific improvements to machinery, that one can but wonder at the delay in applying in practice a knowledge of principles which have been understood so long. Only the other day I saw in an engine-room of one of the large mills of this city, a contrivance which was represented to be simple, and so it appeared.

It was certainly very useful, and the explanation I had of it was so interesting, I determined to make a note of its operation.

Within a huge steam cylinder, under a pressure of from 80 to 100 pounds to the square inch, a piston traverses from end to end, according to the speed of the engine, perhaps fifty, sixty or seventy times every minute. Each square inch of the circumference of the piston bears closely enough upon the interior surface of the cylinder during its rapid movements to prevent the passage of the subtle steam even under the tremendous pressure which is required to furnish the power for all the motion in this large establishment.

To maintain this great speed with economy of power and safety the constant and regular introduction of some lubricant is necessary; but the place in which it is required seems inaccessible.

The problem of how to do this in the most satisfactory manner was solved by a San Francisco mechanic, and the whole principle involved was the simple one of specific gravity.

THE OIL IN THE GLASS TUBE.

The whole world has always known that oil is lighter than water, but it was only recently that this knowledge was made use of to introduce oil into a cylinder against a pressure of 100 pounds to the square inch.

Do you ask how it was done?

The inventive mechanic tapped the feed-pipe of the cylinder and led a small pipe from this point by a circuit of a few feet to a point in the same feed-pipe nearer the cylinder. Midway in this second pipe he interposed an oil cup. The oil, subject to a pressure each way equal to the cylinder pressure, be it what it may, is in a state of equilibrium. But the effect of conducting the steam to the cup in the small pipe is to give it an extra exposure to the air and produce a slight condensation of steam into water. Each drop of water, as it trickles from the pipe and settles into the oil cup, displaces a drop of oil, which immediately rises and is carried through the circuit and into the cylinder with the steam, where it performs its intended office. So simple, so perfect, so successful and economical was this device that it did not seem capable of improvement. And yet some bright ingenious mechanic saw that the thing was not complete; that in the hands of a shiftless man even this device might be used wastefully. To him occurred the idea that a glass tube filled with water might be interposed, forming a part of the return pipe, from the cup to the cylinder, and thus each drop of oil, as it proceeds on its errand, might be compelled to reveal itself to the engineer.

Need I say that it was exceedingly interesting to stand by that cylinder, feel its mighty throb, realize the enormous power it exerted, and observe through the simple glass tube just described the drops of oil hastening on with accuracy and dispatch to perform their appointed duty.

CABLE ROADS IN SAN FRANCISCO.

In this city, under our very eyes, we have seen a revolution created in the system of street railroads, and, while to the public of San Francisco the transition has been gradual and familiar, the invention is of such a character as to deserve here special mention, because the inventor was for many years the President of this noble and enterprising Society, and the invention itself is another example of what Californians are doing for the world.

For many years horse-flesh has been the principal motive power used in carrying people to and fro in cities and towns. And as the democratic omnibus succeeded the more aristocratic cab, it in time became supplanted by the less noisy, more convenient and less costly street car; but they all had to be drawn by horses, and as these modes of conveyance multiplied, as they naturally did from their convenient and cheap mode of transit, more horses were used and a larger number killed by overwork, especially on streets where the ascent was steep, or where the number of passengers carried was very great.

Steam motors, compressed air, latent steam and other plans had been tried without success, and methods that could be operated on country roads were not permitted to be used in cities and towns.

Large corporations were formed for carrying on street railroad traffic; and, possessing thousands of horses, immense stables for their care and maintenance were required.

In such cities as Philadelphia, where streets are almost level and laid out at right angles, the city railroad companies have a car line on every street, and make large profits on their passengers at the rate of fare charged.

But in many cities like San Francisco, where the streets run up and over steep hills, the service to the public was poor, the remuneration to the Company was not great, while the comfort and care of the poor horses were certainly as bad as could possibly be.

The higher hills of the city, were uninviting, except to the enthusiastic climber who had just arrived and wanted to get a bird's-eye view of the State.

At the north end of the city the cars of the Omnibus Railroad Company were drawn up Jackson street, from Kearny to Stockton, a distance of 875 feet, by five horses, the elevation in that distance being 73 feet.

In the winter evenings, when the cars were crowded, the struggle of those unfortunate horses up the steep hill was something terrible.

It was on such an occassion, in the winter of 1869, that A. S. Hallidie was watching the efforts of the horses to draw up an overcrowded car, when one of the animals slipped on the wet cobbles and fell, throwing down the horse behind him. The brakes were immediately put on, and the horses urged to regain their footing; but the brakes being insufficient to hold the car on the steep incline, it slid backward, dragging the horses down the hill to the crossing below.

To this incident we are indebted for the cable road of to-day and all its attendant comforts.

A. S. HALLIDIE'S PLAN MATURED.

Within two years Mr. Hallidie had matured his plans for a road; but like all such inventions and enterprises, it did not at first meet with much encouragement, and but for the assistance and co-operation of two or three gentlemen, who saw in it more than the mere fancy of an inventive mind, it would have slumbered where it was born.

In September, 1873, the first railroad of the kind ever built was constructed on Clay street, in this city; and, while a great many difficulties and obstacles had been overcome, and notwithstanding it surprised the majority of the people by the simplicity of its working, it yet failed for some time to convince the skeptical of its ultimate success; but as it continued to run month after month under the care and guidance of its master, it gradually won the confidence and admiration of the entire public.

The simple principles involved, and their ingenious adaptation, mark the value of the invention and the success of the undertaking.

And what a revolution it has made in the mode of transporting passengers in this city!

The hills have fallen down before it, and they are now even more accessible and certainly more desirable for residence than the level portions of the city.

Where the goats used to frolic on California street hill, mighty railroad kings have built their palaces. The bald old hill has taken on all the bewitching charms of a young girl with a bright, new poke bonnet, while Clay street and Russian hills, decked out in new finery, flirt with those brown old hills across the Gate in Marin county.

SUMMIT OF CLAY STREET HILL.

The summit of Clay street hill, reached by the cable road, is 307 feet above the starting point at Kearny street, and the time required to make the transit is six minutes, by cars that depart every five minutes, ascending the steep incline as noiselessly and as lightly as a bird in flight. The feelings of personal discomfort, of commiseration for the tired and straining horses are entirely absent, and the weary passenger returning home enjoys a rest of body and soul.

Property on these hills, which before the advent of these roads could be purchased at almost any price, now commands high figures, and is being rapidly built upon and improved.

It is eight years ago yesterday since the first experimental trip was made on the Clay street road, which at that time was 2,880 feet long.

Since then the road has been extended to double that length. Four other roads have been built, and another is now in course of construction. On the five roads now in operation steam machinery is employed of the aggregate of 1,300 horse-power, keeping in motion, for eighteen hours each day, seventeen miles of steel wire rope, containing 2,350 miles of wire and transporting 40,000 passengers daily.

Under the old system, one horse would draw, on a nearly level road, an average of forty passengers daily; but ten thousand horses could not perform the work of our present cable roads. Another item is the expense. On the Clay street cable road thirty-six pounds of coal will draw 40 passengers; or, in other words, nine-tenths of a pound of coal, costing three-tenths of one cent, represents the cost of fuel in drawing one passenger.

While the underground railroad is the peculiar feature of London, and the elevated railroad is in like manner the feature of New York, San Francisco takes special pride in her cable roads, in which there has been already invested a capital of one and one-fourth millions of dollars.

The enterprising city of Chicago, that never does things by halves, is building a series of cable roads which will cost over two millions of dollars.

Thus it will appear that while the design of the inventor was more particularly to overcome the difficulties of steep grades, it will prove there, as it has here, admirably adapted to level streets, and the result will probably be that the principal cities of the Union will be compelled to adopt the system on account of its economy, noiselessness, rapidity and general comfort.

I might go on and multiply illustrations of the inventive genius of our people, but time does not permit of extending the inquiry further on this occasion. Let me, however, recommend you to visit the Mechanics' Pavilion, and there among the thousands of articles exhibited, showing the latest productions of the farm, the machine shop, the factory and studio, you will find improvements and inventions both novel and curious, to excite your study and admiration.

OUR MATERIAL RESOURCES.

If it now appears that we have an abundance of mechanical genius in this State, the next question of interest is, "Have we the material in the soil on which to found a large and comprehensive industry? Has nature provided large sources of water-power, and stored up heat in forests of timber and fields of coal? The question is answered in a word.

The water-power of the western slope of the Sierras has been estimated to exceed that of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Delaware.

This tremendous force is now employed in only a limited way by the hydraulic miner, while in the winter season it spends itself extravagantly in flooding the valleys below.

The time will soon come when the hundreds of miles of ditches, canals and flumes that now line the mountain sides for mining purposes will be utilized, and their capacity increased to supply power for manufactories.

FORESTS AND COAL FIELDS.

The immense forests of timber found in the Coast Range and Sierras should be a source of untold and lasting wealth to the State in supplying lumber for building purposes, material for all kinds of wood-work, and fuel for mills and factories; but, unfortunately, the lumber man, although enterprising and liberal, is plying an exceedingly wasteful trade. He plants his greedy saw-mill in the forest beside the river, and immediately enters into a conspiracy with steel and water to carry on a work of destruction. The splendid groves that nature required a thousand years to rear in their sublime grandeur are prostrated in a few days. The choice portions of these great trees are soon converted into lumber, but the remainder is too often burned or allowed to rot upon the ground.

There should be more economy exercised in supplying our present wants from these ancient woods, for the time may come when every stick of wood a foot long will have a commercial value.

The present very able and energetic President of this Society can tell you more about the coal fields of this State and Coast than I can, and I have no doubt, but that I would express his knowledge on the subject in a business-like way, by saying that they are well-nigh inexhaustible.

It is proper to say, however, that it was at one time supposed that the lack of large deposits of good coal was one of the few things wanting to found in this State a great mechanical industry.

The discovery of tertiary coal fields—a more recent formation than the anthracite or bituminous coal—and sometimes improperly called lignite, was considered as an indication that the older and better series would not be found on this coast. I remember the charming excuse that was made some years ago that nature had been so busy making gold and silver she had not had time to complete her manufucture of coal, and we had surpised her in the act. This is proven to be only partially true, for the quality of our coal improves with each new discovery, until now, for smith purposes as well as for fuel, our home product promises soon to supply all our home demands.

Prospectors also report discoveries of coal of a quality that will yield excellent coke and hard coal suitable for the forge. The consumer is thus assured that all his wants in this respect will soon be fully supplied in both quantity and quality by home production.

THE FIRST IRON MADE IN CALIFORNIA.

At this point the pleasant duty devolves upon me to make the announcement of an event of more importance to the people of this coast than the result of an election or the birth of a prince. And yet it is indeed the birth of a king that I am called upon to proclaim to you--a king wielding an influence more potent than gold, and bearing in his hands the sceptre of an absolute power.

In order that the advent of this new dynasty may be properly recorded in the annals of the State, let us notice with some particularity that at 4 o'clock on Sunday morning, April 24th, 1881, the first iron ever made in California was run from the furnace. The event took place in Placer county, and the locality is named Hotaling, in honor of the well-known San Francisco merchant, who, with Irving M. Scott (a former President of this Institute), and Egbert Judson were the founders of this enterprise.

The establishment is under the superintendence of James M. White. It produces twenty-five tons of pig iron per day, and as it has now been in operation just one hundred days its production has been 2,500 tons. As the supply of ore, fuel and other materials required is practically inexhaustible, the manufacture of pig iron may now be considered a permanent business in this State. The King has been duly installed. Long live the King! But you may ask why is this an exceptionally important event in California? The question is easily answered. It is because iron enters so largely and generally into the Mechanic Arts that they can scarcely be said to exist without it. And the lessons of all the years since 1849 have been that we must make use of the original materials that have been so generously supplied by Nature, work them into what is called raw materials, and in manipulation of the latter become manufacturers, or we will lose through competition all the advantages we gain in other departments.

Foreign burlaps and machinery deprive our farmers of a considerable profit on their grain crop, and so it is in many other branches of business.

Any community that obtains its raw materials from abroad is at best but a vassal of some other section, while every addition made to its products is a link severed from the chain of dependence that binds it, however unwillingly, to a distant and perhaps an unfriendly interest.

The manufacture at home of a good quality of pig iron liberates us at once from the domination of the foreign metal markets, and makes possible the manufacture of many things of vast importance to the people of this coast, Iron plates suitabie for ship-building ought to be made here. This would enable the Pacific Coast to build and own a fleet of ships that could control the coast and foreign trade in the interest of home capital and enterprise.

Then would arise a demand for skilled as well as unskilled labor, and by cheapening construction extend the area to be supplied, build up commercial trade, protect our merchants, and add another solid block to the foundation upon which our future greatness will rest.

THE MECHANIC AND HIS FIELD.

The next, and by far the most important factor to be considered in any estimate of our future success in the manufacturing enterprises, is the mechanic himself, for without him all these calculations are idle and useless.

The question is, "Does this State furnish an inviting field in which the mechanic can work out the problem of a comfortable existence?"

This has been a serious question in the presence of a constantly increasing foreign horde, rapidly monopolizing all departments of labor; but the recent ratification by both parties of a treaty between the United States and China, under which the United States is permitted to restrict this non-assimilating immigration, gives us hope to believe that this vexed question will soon be settled in favor of the Caucasian race.

Let Congress act promptly and effectively under the treaty stipulation and put a stop to this invasion. The immense number of arrivals by every steamer warn us that action cannot be had too soon, and we look to our representatives in both Houses of Congress for a determined effort in that behalf. With this question settled, the mechanics, and, in fact, all classes, will feel more contented. Agitation will necessarily cease when the cause for it is removed, and capital will return to its accustomed channels. Our young and active boys will be encouraged to learn some useful trade when they know they will not be driven from their employment by a race with whom they cannot compete on any narrow ground in a contest for existence.

EXCELLENCE IN WORKMANSHIP.

There does not seem to be any just reason why this State should not be the best place in the world for the mechanic, and I believe it will be so demonstrated very soon; but there must be an effort made to attain excellence in workmanship before there can be any successful competition with the manufactures of the East and Europe.

And here it is that the influence of this Institute should be made aggressive and effective. The Society is to be congratulated for the splendid work it has already accomplished. Its Library of over 30,000 volumes of choice literature, including the best collection of scientific works on the coast, is a matter of just pride. The courses of lectures it has furnished to its friends and patrons have been exceedingly beneficial, and the whole State has eagerly watched the improvements, encouraged and developed by the periodical exhibitions given under its auspices. But something more should be done in the direction of education. Our young men and boys need counsel and instruction, and I am glad to know that I but reiterate the opinion of the present officers of this Society, and their predecessors, when I say, that there should be some further means employed for imparting instruction in the mechanical or technical arts.

We have arrived at a point in the development of the resources of this State where the best appliances must be used, and the most skillful workmen employed, if we expect to keep pace with the world at large.

The fruits that grew near at hand have all been gathered, and we must now reach and climb for those which are beyond our immediate grasp.

The first miners found gold near the surface, and generally separated it from the earth without the assistance of much machinery; or, if any was used, it was of the most simple character. But now we find the miner, as he pursues the receding metal into the mountain, assisted by the most complicated and powerful machinery on the globe, while he himself has developed genius in the pursuit and skill in controlling and directing his mechanical agents. And so it is in nearly all departments of industry. What the State wants now is men specially trained and skilled in their respective callings. Here again we have the raw materials in abundance.

Our boys require just this training to make them safe citizens and capable of becoming a power in the great forces of the world. It is the men who labor in some legitimate industrial pursuit that furnish the muscle and the muscular brain—if I may be permitted to use the expression—to blaze pathways into the mysterious depths of nature and nature's forces.

EVERY BOY SHOULD LEARN A TRADE.

Says Mr. Wendell Phillips, in his recent address at Harvard College: "Book learning does not make five per cent. of that mass of common sense that 'runs' the world, transacts its business; secures its progress, trebles its power over nature, works out in the long run a rough average justice, wears away the world's restraints and lifts off its burdens. The ideal Yankee, who has more brains in his hand than others have in their skulls, is not a scholar —and two-thirds of the inventions that enable France to double the world's sunshine and make Old and New England the workshops of the world, did not come from colleges or from minds trained in the school of science, but struggled up, forcing their way against giant obstacles, from the irrepressible instinct of untrained natural power. Her workshops, not her colleges, made England for awhile mistress of the world—and the hardest job her workman had was to make Oxford willing he should work his wonders."

Every boy that can should learn a trade, whether he expects to follow it or not. Nothing is lost in learning how to work. If the aim of the boy is high, so much the better. The training will do him good.

But it has been said that there is no room here for a great many boys to learn trades, and that as many as can be accommodated are now employed. If this is true, let us hope that some plan will be devised at once to teach a trade to every boy who is willing to learn.

There is always room for excellence. Well-trained men can always find employment. It is the idle, the wasteful and extravagant who are always being pushed to the wall. There is generally plenty of work for those who are skilled and willing to work, and always unsolved problems for those who are able and willing to think.

"The powers of man," says Emerson, "have not been exhausted. Nothing has been done that cannot be better done. There is no effort of science or art that may not be exceeded; no depth of philosophy that cannot be deeper sounded; no flight of imagination that may not be passed by strong and soaring wings."

Let us not be afraid of having too many well-trained men. No nation ever suffered from this class of population, and it is not likely we shall.

A NEW ELEMENT OF WEALTH AND POWER.

Mr. President and gentlemen of the Mechanics' Institute, persevere in your efforts to infuse into the atmosphere of this State a new element of existence, wealth and power! It is a great labor with which you have become identified, but it is a noble work.

As you proceed you may suffer many disappointments. This is the common course of all great developments,

"Checks and disasters
Grow in the veins of actions highest rear'd
As knots, by the conflux of meeting sap
Infect the sound pine, and divert his grain
Tortive and errant from the course of growth."

But the ultimate result can not be doubted. The pine will continue to grow, and this State must continue to develop. Its commerce will be extended; its manufactures increased, and the productions multiplied. These will be your monuments.

AN AGE OF PROGRESS.

If we look abroad, we find we are in an age of wonderful activity and progress, and we are in the line of march. Take, for example, the improvements and discoveries in the field of electricity. We find that rapid strides have been made in the divisibility of the current, while Faure in France, and Brush in America, have solved the problem of storing electricity in convenient packages that will contain this suppressed energy for an indefinite period, and can be transported any distance. Perhaps this invention hints, that in the near future, our house lights, done up in neat packages, will be left at our door, and the empty cans taken away to be refilled. No smoke, no smell, no dirt, and, let us hope, no bill.

Judging from what we already know, we readily admit the future marvelous possibilities of electricity. Its use to-day in the city of Berlin, as a motor to propel street-cars, may be the practical application of a principle that will lead to its employment in the operation of railroads, and the future Pullman express train may be a lightning express, indeed, with speed and comfort as superior to our present accommodations as the latter are superior to the old stage coach.

The improvements and new uses of this mysterious power is an illustration of what is being done in every department of force, and in every place where the welfare, comfort and happiness of mankind is the subject of thought.

Invention has summoned the nations of the earth to a grand procession in honor of her recent great discoveries. The United States occupies a prominent position in all these triumphs, and when the roll of States is called we must be ready with our banners to show what we have done and what we are doing. For the inhabitants of these States are but one people in all the elements that constitute the greatness of a nation;

We are one people in all the glories achieved in the advancement of science and arts, and in the bounteousness of productions.

We are one people in all our hopes and aspirations for the future fame of the whole country.

We are one people in a great sorrow when the head of the Nation suffers and comes near death's door at the cruel hand of an assassin.

The ties of interest and social intercourse, are not wanting in strength or tenderness between the people of different sections when the whole people of the nation stand as one man, uncovered and with bended form, in the presence of a mighty grief for a stricken President and his afflicted family.

During the past month, from all the States of this Union there has arisen one prayer to the Throne of Mercy, that the God of Nations might spare our beloved President.

Perhaps in the inscrutable wisdom of Providence even this great calamity has its uses in serving to unite us all in closer ties of a common brotherhood.

It may be that through these blinding tears we may see our way to a more perfect union, and the dream of the statesman be realized.

"When the people throughout our almost boundless domain may be seen coming together as brothers, with one love of country, and one hope of a common destiny—of safety, welfare and national glory—with one determination to achieve it by united efforts, inspired and strengthened by an equally pure and ardent patriotism; former differences forgotten and nothing remembered but their ancient concord and the equal title they have to share in the glories of the past and to labor together for the even greater glories of the future."

Miss Coursen then, in appropriate costume, sang the "Star Spangled Banner," in a manner that roused the audience to the highest point of enthusiasm, winning earnest and well-merited applause.

The tableau of "Mechanic Art," represented in actual work artisans at various trades, including machinists, carpenters, blacksmiths, boiler-makers, shoemakers, tinsmiths, spinners, weavers, coopers, etc.

The doors of the Pavilion were thrown open to the public at seven o'clock in the evening, and the Sixteenth Industrial Exhibition, thus happily inaugurated, commenced its mission of instruction and pleasure to the expectant crowd in attendance.

ALPHABETICAL LIST OF EXHIBITORS.

NOTE.

As no premiums were awarded this year, except the "Institute" and "Inventors'" medal, no classified list of exhibits has been made out; but the names of exhibitors are arranged alphabetically. The name of the exhibitors and articles exhibited in the Art Gallery appear in the Art Catalogue following this list.

The following notice was inserted in the *Fair Daily* for two weeks, and each exhibitor personally notified of the importance of complying with the request set forth therein. Those who paid no attention to the matter, or did not supply information regarding their exhibits, have no cause for complaint if an extended notice of the goods exhibited by them is not given in this Report:

"TO EXHIBITORS.

"The Board of Managers of the Sixteenth Industrial Exhibition will prepare and publish for gratuitous distribution, as soon as possible after its close, a full report of all matters connected therewith. In order that it may be correct and complete, each exhibitor is requested to furnish to J. H. CULVER, the Secretary, such written or printed matter as will explain their exhibit. Immediate attention to this notice will greatly oblige the management."

AARON, Miss Fanny.—Show case of Shirred Work.

Very neatly done; showing artistic taste and skill in arrangement.

AKIN, Wm.—Automatic Advertiser.

A great amount of ingenuity and inventive skill has been expended in devising new forms and ways of presenting advertisements to the public so as to attract attention. This invention is patented, and consists, in external appearance, of an ordinary weight-winding clock, except the door, which, instead of holding a mirror or picture, as usual, contains a card of printed matter or photograph, that, by ingenious mechanism, is caused to drop away from the opening every minute or half a minute, leaving a new card in sight, which, in turn, is succeeded by another, until the whole number (which may be more or less) has been exposed, and card Number 1 is in sight; and then commences another round. The cards may contain advertisements alternating with pictures or other attractive matter, which serve to retain the attention of beholders until the entire list is seen. The mechanism for changing the cards is very ingenious, and the advantage of advertising many things in a small space is gained. It is intended for railway stations, depots, waiting rooms, etc.

AMERICAN SPRING BED COMPANY.—American Spring Bed Bottom.

This Company claims for its bed a superiority over all others, it being clean, durable and adjusted for persons of abnormal weight.

ANDERSON & FASSIER.—Russian Polish.

This compound contains no poisonous element; it instantly removes dirt, tarnish or fly specks. Applied to mirrors it gives a brilliant polish, and keeps flies away for a month.

ANDERSON & GREEN.—Curves on Cable Railroads.

In the cable railroad system in vogue in this city, where the grip connected with the dummy passes down through a slot in the road-bed to connect with the moving cable, it works well as long as the road is in a straight line; but on rounding curves difficulties are met with, as pulleys have to be put in to take the strain off the cable, and the grip will not go over the pulley. Anderson & Green have overcome this obstacle in an ingenious yet simple way. Pulleys are placed two feet apart all around the curve, and in the grooves of these pulleys the cable runs. Each pulley has a lever on each side of it. As the grip comes along on the cable it strikes a lever which throws the pulley back out of the way, so the grip clears it. As soon as the grip has passed the pulley, it strikes the other lever which throws the pulley out again and locks it there, this action being repeated at each pulley. The operating mechanism for the levers is positive and simple. The grip passes around the curve without the possibility of striking any of the pulleys, while at the same time the pulleys maintain the cable in its proper position. There are no extra cables, no stops or lugs and no springs. The pressure of the cable draws the pulley back, and the lever throws it out again by a positive motion. A. S. Anderson is the inventor.

ANDREWS, H. P.—Williams' Sewing Machines.

This exhibit comprised six machines, in whose construction, it is claimed, all the good qualities of the old machines and several new inventions are combined.

ANTISELL, T. M. & Co.—Display of Antisell Pianos and California-made Organs.

This display of Musical Instruments was the largest ever made by a single firm at any Fair on this coast, and consisted of fifty pianos and thirty organs in a variety of styles, and arranged in the best manner for effect. The walls of the space assigned them was tastefully decorated, the floor covered with high cost carpet, while the usual reflectors were replaced by elegant chandeliers. In addition to solo playing on these instruments by competent pianists each evening, on several occasions grand concerts were given wherein sixty performers took part, producing a volume of sound not often heard, and which was duly appreciated by an audience limited only by the space surrounding the exhibit. This firm is now largely engaged in the manufacture of Organs, having an extensive factory supplied with the most improved machinery. "Carpenter's Organ Action" is used exclusively in these instruments, it being the oldest and considered the best in America. For further remarks on this exhibit see Report of Committee on Musical Instruments.

BAKER, C. H.—Mining Horse-Power.

This necessary and useful invention claims to have many advantages over other machines, being specially adapted to the wants of this coast. It can be easily placed and held in position, and perfect control is had, on the weight being raised, by a very simple but effective lever. It would be wise for all exhibitors of such inventions, when possible, to arrange and place them in actual operation; then their merits could be better understood.

BAILEY, Miss Harriet F.—Paper Sculpture Work.

Miss Bailey exhibited surprising skill with a pair of scissors by deftly cutting any desired object from paper. Flowers, ferns and leaves, as perfect as though pressed from nature, were rapidly produced by her nimble fingers without apparent effort. This special branch of ornamentation is her own invention, and received, at the Centennial Exposition, a Bronze Medal for her handiwork.

BALDWIN, E. J.—Display of Baldwin's Grape Brandy, Angelica, Port Wine and Zinfandel Claret, and Fruits from his Santa Anita Ranch.

This choice piece of real estate consists of 16,000 acres, 12 miles east of Los Angeles, and is the Garden of the Angels in surety, if any such designation may be applied to earthly homes. He has spent thousands of dollars in improving and beautifying this fine property, experimenting in the culture of fruits, nuts and vines, and in the manufacture of wines and brandies. The present exhibit in the Fair is one of the results of his labors in the furtherance of these industrial pursuits. It embraces, in part, Mediterranean Sweet, Navel, Chinese, Tangerius, "Baldwin's Favorite" and Mandarin or Shattuck oranges; limes, lemons, pomegranates, Japanese persimmons, bananas, white and black figs, Hungarian prunes, green gages; Russet, Gravenstein and Bell-flower apples; Russett and Bartlett pears; nectarines; mountain peaches; Blue Elm, Black Morrow, Tokay, Mission, Gutedel, White Muscat and Zinfandel grapes; asparagus, black and red pepper, Egyptian and yellow corn, sugarcane, tobacco, Odessa and Australian wheat, Chevalier barley, white oats, flaxseed, etc. His pyramid included five-year-old brandy, six-year-old brandy, Port, Angelica, claret and white wines of last year's vintage.

BARGION, P.—Bargion's Patent Compound Rail.

This rail is composed of iron and steel, the latter being so arranged that when worn on the inside it can be easily reversed, and present a new surface for traction of the wheels. There is also a groove beneath it which may be used for holding telegraph wires.

BEAMISH, P.—Gents' Furnishing Goods.

As at many previous Fairs, Mr. Beamish made a large and fine display of all articles pertaining to men's underwear, scarfs, cravats, handkerchiefs, etc.

BEHRENZ, B.—Feather Dusters, Brooms, Brushes, etc.

This exhibit was deserving of much commendation, it being entirely of Californian manufacture, and comprising almost every variety in use. Several workmen were employed each evening, showing visitors how brushes are made, and the care and good material used in their manufacture.

BENJAMIN, J.—Hand-made Bullion Quilt made by a New England lady, 90 years of age.

The handiwork of this venerable lady gave no evidence of extreme age; and would serve as a good model for the present generation.

BENN, John S.—Artificial Flies.

Lovers of the sport in which the "gentle Isaak" indulged, may find in Mr. Benn's flies a superior article. From a small beginning two years ago, he has now a thriving business. He is evidently a "master of the situation."

BENNETT, Miss A.—Lace shawl.

This was made by hand and is a most beautiful specimen of Woman's handicraft, combining artistic taste and skill with an article of utility.

BERRY & PLACE.—Bisscop's Gas Engines; five Gardner Governors.

These engines are a new aspirant for public favor in this market. They attracted much attention owing to their compactness, power, silent running and an extraordinary small consumption of gas. The "Governors" were run by a belt from the smallest engine.

BECHT, G. J.—Eastman's K. C. Soap and Linen Glace.

BEMAN, Wm.—Case of Trusses, Surgical Appliances and Artificial Limbs.

This exhibit attracted attention and favorable comment by the artistic display of different kind of appliances, but more especially for the Elastic Cork Truss. Mr. Beman is known as a skillful and artistic surgical mechanic, and seems to have an inspiration in inventing appliances for the alleviation of human suffering. Cork, being a non-conductor, soft and elastic, is admirably fitted for the purposes to which Mr. Beman has applied it.

BEQUETTE, D.—Working Plan and Elevation of Proposed Elevators and Flouring Mills for the Water Front.

The inventor of this plan says that no city in the United States with a harbor has a greater demand for elevators and flouring mills than San Francisco, and as yet no real effort, except his own, has been made to supply this want. Mr. Bequette's plan is to have on the water front, near the grain sheds, elevators and mills sufficient to grind the wheat before shipping, thus saving a large percentage to this coast that is now paid for sacking, freight, millers' premiums, etc. The inventor gives numerous figures and statistics to support his statements.

BLIVEN & MITCHELL.--Natural Mineral Water; Pure Eastern Cider.

The water was from the Pacific Congress Springs and is highly valued for its medicinal properties.

BOESCH, Emile.--Pacific Lamp Reflector Factory; Patent Locomotive, Mining, Ship, Railroad Car, Coach and Street Lamps; Frinck's Patent Silver Plated Corrugated Glass Reflectors and Sun-lights; Metal Spinnings and Stamping.

Mr. Boesch, by persistent labor and energy, has built upon this coast a business and a manufactory for the above articles, the quality of which in every respect is not excelled anywhere. He is also the inventor of many useful devices now in general use. His zinc architectural ornaments are in demand, and new designs are constantly being added.

BODLEY, E. C.--Eldridge Sewing Machines.

A new machine, which is solicitous for the favor of industrious housewives and manufacturers of the "demands of fashion."

BOONE & OSBORNE.—Display of Patents.

This exhibit was principally of models for the Patent Office, mostly Californian inventions.

BOERICKE & TAFEL.—Homœopathic Medicines.

A very fine and extensive display of pharmaceutical preparations, put up in attractive vials and packages.

BOWEN'S YEAST POWDER.—California Yeast Powder, Sperry's Flour.

Mr. Bowen's exhibit was made specially attractive by his baking and giving away an immense number of biscuits, raised by his unrivalled Yeast Powder, and also by the presentation of a beautiful frosted cake each evening to the person who gave the nearest guess as to its weight. It was astonishing to see what a difference of opinion visitors had as to the number of pounds and ounces in the hoped-for present. If the actual weight was five pounds, the guesses would range from one to twenty, notwithstanding each guesser had the privilege of taking it in the hand. A fine set of crockery, valued at $150, was given away in the same manner on the closing night.

BOWMAN, Mrs. Agnes.—Hand-made Rugs.

This old lady, now over 76 years of age, is a great worker, and each year takes pleasure in making something for the Fair and visiting the same. The rugs were well made, of burlaps and new woolen yarn, tasteful in design, soft to the touch, and represented two months of patient labor. It is a pity that the spirit of the past day and generation, as shown in this exhibit, does not pervade the present to a greater extent, and the handiwork of women be devoted more to the useful than the ornamental.

BRAY, W. H.—Improved Step-ladders.

This recently-invented and patented ladder is credited with excelling in many particulars all others. It is constructed with special reference to strength, utility and portability, and consists of two distinct ladders, so as to be ascended from either side, thus having no useless back. The steps are secured in a peculiar manner, on strict mechanical principles, and so devised as to give the greatest amount of strength to the least amount of material. It is adapted for the use of the painter, paper-hanger, or for general house use, and is afforded at a very moderate price.

BREHM, R. W.—Wood Turning.

The great variety and beauty of California woods were well shown in this exhibit, in the form of vases, cups, canes, cuff buttons and fancy articles, turned and polished in the Pavilion by Mr. Brehm, who is a competent and skilled workman.

BRINKMANN, G.F. E.—Quartz Crusher and Pulverizer.

Brinkmann's Quartz Crusher and Pulverizer is the first one of the kind ever exhibited. It has a capacity of one ton per hour, fine enough to pass through a No. 40 screen. The mechanism is simple, and it takes 10-horse power to drive the machine, the ore being run through either dry or wet. All the machine's parts that are subjected to wear and tear can be replaced, and the wear and tear will be almost the same as to a common stamp-mill. The machine works without much noise, and when crushing dry causes little dust. The principle of the machine is that of a semi-circular mortar, the bottom of which is formed like the grate bars of a furnace, for the ground ore to pass through. The mortar is lined with shoes, and made of white iron. On these shoes are placed solid cylinders of white iron. On these cylinders rests a cylindrical muller of about 3,000 pounds weight, this being shod with white iron. The muller is provided with a lever, through which an oscillating motion is imparted to the same. Through the center of the muller lengthwise passes a shaft, extending on both sides sufficiently to allow the admission of bearings. On these bearings wooden-pressure beams create an elastic action, making it possible to cause a pressure of 50,000 pounds, or more, on the muller when in operation. A peculiar feature of the bearings is that they slide from one side to the other, throwing the center of the shaft from its fulcrum, and creating thereby an eccentric. Mr. Brinkmann, owing to unforeseen delays, did not get his mill in running order until near the close of the Fair. The mining department of the Exhibition was at all times well attended by persons interested in mines or the reduction of ores.

BROWN, Richard.—Flying Machine.

Probably no exhibitor in the Fair attracted as much attention, promised so much and accomplished so little as Mr. Brown, although he expended an untold amount of mental and physical energy on his aerial invention. Inventors had two incentives this year to produce a successful flying machine that would carry a man across the Pavilion—immortal fame and $1,000—offered as an award by the Board of Managers. Mr. Brown's invention consisted of an oblong frame of wood, along each side of which were wings composed of wood and pasteboard. The latter were about twelve feet long and four feet wide, and were made somewhat like a window-shutter. When being raised the shutters would open, allowing the air to pass through; but when moving downward they would close and have great lifting power. They were worked by a wonderful system of compound levers and joints attached to the hands and feet. In order to show its working before sailing away in space, the inventor had wheels placed under it, and a track made one hundred feet long to guide it as he worked the wings. When completed, its weight, including the inventor, was about 450 pounds. Notwithstanding the best efforts of Mr. Brown, the machine refused to move either up or forward, much to the disgust of the Superintendent, who had taken great pains to aid and supply everything needful for its completion, and intended, at the close of the Fair, to borrow it and fly a few thousand miles for change and recreation. It will be long remembered as a curiosity in the "failure" market. It has since been secured by the Manager of Woodward's Gardens and placed there as an "object of interest."

BROWN, Carrie I.—Crochet Quilt.

This was a very pretty pattern, indeed, particularly the border part, and it was well made.

BROWN, Chas. & Son—Winthrop Portable Ranges, Wildwood Ranges, Belmont Ranges, Oil Stoves, and Stoves of all description.

The Winthrop Ranges are well-known on this coast, and the display of their various sizes, with other ranges and stove furniture, was very attractive to housekeepers. A new coal-oil stove, the invention of Brown, Jr., is considered a great improvement on that useful article.

BROWNLEE, Mrs. F. C.—Samples of Needham's Red Clover.

BRUNSWICK, The J. M. Balke & Co.—Billiard Tables, Ten Pin Balls, Racks, Ivory Balls, Pins, Cues, etc.

This fine exhibit of billiard furniture was a prominent feature of the Exhibition. It consisted of every variety of billiard table and their appurtenances. This Company, so well-known throughout the United States, spared no expense in their display. It was well appreciated by all lovers of the noble game and connoisseurs of fine cabinet work.

BUCKLAND, Geo. G.—Buggy and Buckboard.

These have a peculiar gear, the side bar being his own patent.

BULL, Geo. & Co.—Straw Burning Steam Engine, Separator, Farm Wagon, Fanning Mill, 3-Gang Plow, Sulky Plow, Side Hill Plow, Patent Steel Beam Walking Plow, Self-dump Horse Rake, Cultivator, Grain Seeder, and a full line of Agricultural Implements.

All these articles are of nearly new and improved construction, manufactured expressly for this market by J. D. Case, Threshing Machine Company, Racine, Wisconsin. That State, in its methods of culture and the size of its grain fields, more nearly resembles California than any other State, and implements that have stood the test there can be safely relied upon to work profitably on the plains of the Sacramento and San Joaquin. The straw-burning threshing engine met with approval from every practical field engineer who examined it. Its claim to improvement lies in the fact that the fire-box is placed under the middle of the boiler, does not have to be removed in traveling, may be fed from either side, burns wood or coal just as readily as straw, and consumes all smoke and sparks with either fuel.

The Case Agitator Separator is a complete machine for threshing, and when coupled with the engine, makes a wonderfully-effective threshing outfit. This separator averaged on Dr. Glenn's farm five sacks of wheat per minute for ten hours—6,250 bushels—which is a hard record to beat. It has many special improvements, and among others a jumping motion to the straw rack, which shakes the grain down before it comes so near the rear as to be liable to wastage from being blown over. Four feeders have tried in vain to choke the 36-inch cylinder, and no grain was wasted in the trial. It threshes equally as well on wet grain or flax, and is not a high-priced machine.

Among the plows we particularly notice the Case Sulky Plow. All its working parts are steel, wrought iron or malleable iron, and the draft is direct from the beam of the plow. The wheels, tongue and seat are only for riding, guiding, and raising and lowering the plow, while the levers which do this only act on the plow itself, and do not have to raise the driver's weight, as do many other plows. There can be no side draft, as every strain is direct, and the plow, being held in just the proper position for effective work, runs easier and lighter than when held by hand. The beam is steel, heavy, and does not touch the mould board, arching back to keep out of the way of the stubble or fodder, thus avoiding clogging. These, with their 3-gang and single plows, built on similar principles, side-hill plows of improved construction, walking and riding cultivators, fanning mills, horse rakes, farm wagons, and a full line of agricultural implements, make up an elegant display.

BURNETT, G. G.—Perfumery; Elixir Peruvian Bark and Iron.

This exhibit was well patronized by visitors, and each one bore away a sample of perfume generously and indiscriminately distributed from an atomizer energetically and scientifically operated by an engaging young man.

BURR, G. W. & C. H.—Slop Hoppers, Weather Strips.

These slop hoppers are a Californian invention and manufacture, and from their excellence, are meeting with a ready sale.

CALIFORNIA FURNITURE COMPANY.—Fine Furniture.

This Company is what its name implies. Not only is it a Furniture Manufacturing Company, but it is a California Company, manufacturing a large amount of goods each year in our midst, giving employment to scores of our people, using thousands of dollars worth of our raw material, and sending abroad over the coast the results of our industries. The establishment covers half of a 50-vara lot, and is four stories in height, full from bottom to top of material, goods in course of manufacture, shipment, or stored on sale. Its wares stand high for excellence and elegance in the market and household. The only goods they import are those that cannot be profitably manufactured here, on account of the cost of importing raw material. The display made by them, for beauty of finish, richness of upholstery and durability of manufacture, cannot be excelled in any city in the United States. Ebony parlor sets upholstered in silk and satin; French walnut bed-room sets, with panels in burl that are a marvel of wood tracery in grain; ebony side-boards, beautifully carved, with massive French plate mirrors; escrutoires fit to grace a Duke's palace; and, to contrast, some venerable relics a hundred years old, yet in good preservation, but so stiff and angular as to give one the back-ache to look at them. One of these once belonged to Stephen Hopkins, a signer of the Declaration of Independence.

The encouragement of home manufacture should be the duty of our citizens, since the permanent prosperity of this city depends on their success.

CALIFORNIA IRON COMPANY.—Samples of Iron.

This exhibit, though small and unattractive to most visitors, is one that in future has possibilities of immense magnitude and importance to the industries and prosperity of the coast. The display consisted of several samples of pig iron, of varying quality from 1 to 5; also malleable iron and chilled car-wheels, broken to show the depth and character of the crystallization.

The mine and works are situated near Clipper Gap, in Placer County, and are now in full operation, charcoal being used for fuel. The iron meets with ready sale, being well liked at the foundries. It is equal to any and superior to most of the imported metal. It is pleasing to record the establishment of such an enterprise, particularly as the management is composed of men of practical ability and sound business qualifications, who know "no such word as fail."

CALIFORNIA ELECTRIC LIGHT COMPANY.—

Several different systems of electric lighting are employed to produce the electric light, but that of Mr. Charles F. Brush, of Cleveland, Ohio, is to-day pre-eminently the most perfect and widely-used system of electric lighting in the world, over 90 per cent. of the total of light now in use being constructed upon this pattern. The California Electric Light Company, No. 119 O'Farrell street, have secured all the rights under this patent for the Pacific coast and ten of their lamps were used in the Pavilion during the Fair. One of the important features of the Brush machine is the arrangement of the magnets by which the magnetic field is produced, and by which the armature coils are, during their revolution, almost continually passing through a very intense magnetic field. The regulation of the lamps is quite as much an element of the remarkable success of this system of electric lighting as are the machines themselves, and while their performance is surpassed by no other regulator, and although they contain special contrivances to enable them to maintain a steady arc when burning 16 or more together in a single circuit, they are probably the simplest in construction of arc regulators, involving no clock-work or complicated feeding mechanism, or indeed anything that is liable to become deranged. They can be constructed to burn continuously for eight, sixteen, twenty-four, or indeed for any desired number of hours, and the mere hanging of a lamp in its place puts it thereby into the circuit of the other lamps of the series, and with the machine, while, on the other hand, the extinction of one or more lamps, or indeed their removal altogether, does not affect the others except (if the machine be driven at the same speed) to make them brighter; but by driving the engine slower and therefore using less steam, the same initial degree of illumination can be maintained in each of, say, fourteen lamps, as if all the sixteen were in operation. The great simplicity of the Brush lamp consists in the fact that the feed is actuated by gravity alone, while it is controlled solely by the influence upon a bar of iron of a magnetic field, the intensity of which varies with the strength of the electric current passing through the lamp circuit.

When the lamp is put into action, the arc is formed between one of the pairs of carbon, and, when they have burned out, the other pair automatically starts into action and continues to burn until it is in turn consumed. In this way the time of burning is doubled, and in order to extend the period of burning it is only necessary to employ a lamp with a third pair of carbons, when it will be capable of illuminating for twenty-four hours, each additional pair of carbons extending the period of burning for another eight hours. The change from the one pair of carbons to the new pair is effected by purely mechanical means, and by a contrivance the ingenuity of which is only measurable by its extreme simplicity.

CALIFORNIA SILK CULTURE ASSOCIATION.—Cocoons, Silkworms, Eggs, Reel in Operation.

The California Silk Culture Association is the name chosen by a large number of energetic and public-spirited ladies for their Society, which is now the most active agency in awakening new interest in silk culture. The society has already enlisted a number of ladies in different parts of the State in sericultural experiments, and the results thus far obtained are very encouraging. The exhibit of the Silk Culture Association is very comprehensive. It contains, first, a collection of wild silkworm moths from India and China, as also a number of the ordinary kinds. They are the property of Dr. Behr, of this city. In cocoons, the finest exhibit is that made by Mrs. S. A. Sellers, of Antioch. It is made under the auspices of the Association, and comprises the following different varieties, all of California growth: French Annual, Japanese Annual and Bivoltines. The French Annual cocoons are considered the best for manufacture, being also the largest. The Bivoltines, or, as the name signifies, bi-annuals, are the smallest varieties. In addition to the cocoons, Mrs. Sellers exhibits a lot in different colors of reeled, raw and floss silk, together with a number of silkworm eggs and moths. The display is a very complete one, occupying one entire large case, and would do credit to any exhibition in the world. The other exhibitors in the stall of the California Silk Culture Association are Mrs. Keeney and Mrs. McLean of San Rafael, Mrs. Dodson of Red Bluff, Mrs. James G. Whitney, San Francisco, Mrs. F. Dennis, Sutter Creek, and Mr. Bethleheim of Antioch. The newly-invented frame for silkworms to wind cocoons, the idea of Felix Gillett, of Nevada City, is worthy of notice, as are two very fine specimens of the California wild silkworm moth. It is stated that a very similar kind of moth to the California one is found in some portions of Tartary, and that the people make from it a rough silk cloth that gives unending wear. Garments made from it have been handed down by the Tartars from generation to generation, from time immemorial. Mrs. T. H. Hittell, the indefatigable Secretary of the California Silk Culture Association, has some interesting old German illustrated works treating of the silkworm and silk culture, and Miss Mary Wackenreuder of San Bruno has a very pretty imitation in wax of the mulberry tree, and the silkworms feeding. The operation of reeling the silk from the cocoons was given on Wednesday and Saturday afternoons.

The question of the adaptability of our climate for profitable silk culture is again being brought before the public by the efforts of this Association, the members of which are endeavoring to foster an industry that will give employment to hundreds of their sex who are by nature peculiarly adapted to master and skillfully handle its delicate details. Much interest throughout the State in regard to sericulture has been awakened by the praiseworthy efforts of those ladies, and if the same perseverance is continued for a year or two, success will surely follow.

CALIFORNIA SILK MANUFACTURING COMPANY.—Samples of Silk Thread.

This exhibit, contained in one large and two small glass cases, was very attractive and displayed great artistic taste and skill in its arrangement, which represented the State Capitol at Sacramento, the building, the steps thereto, and the lawns approaching it, being all formed of spool and skein silk of various colors. This commendable industry has been moving forward year after year in magnitude and extent, until now they employ 140 persons, over 100 being young girls and women. A capital of between $100,000 and $200,000 is used in carrying this enterprise forward; their monthly expenses being from $12,000 to $15,000, an increase of from $1,500 to $2,000 over last year. The wages paid are 60 to 90 cents and $1 for unskilled labor, and a suitable increase for skilled labor. They make all kinds of thread for domestic and manufacturers' use, and of a quality superior to any thread in this market. As a home industry it should be fostered and encouraged, as our State is especially adapted for silk culture. The proprietors, Rogers, Meyer & Co., and the enterprising agent, Robert Y. Yates, are deserving of great credit for promoting his industry to such a state of perfection and unqualified success.

CALIFORNIA WIRE WORKS.—Wire Goods, Cloth, Summer Houses, Cages, Fencing, Railing, etc.

One of the first exhibits to attract the notice of visitors entering the Pavilion from the Mission street side, was the beautifully-furnished garden of the California Wire Works. It was on a raised platform 36x70, inclosed with a wire fence of ornamental design and arched openings, filled with every conceivable article that may be made of wire, except rope. Chairs, lounges, tête-à-têtes, summer houses, flower stands, vase holders, table service, and last, but not least, a large aviary with birds and fountain therein. The display was very attractive, and the manufactory is one of our most successful industries.

CAVANAGH, Eddy.—Fret Saw Work and Brackets.

A very creditable exhibit, and time well spent. It is a pity that the idle youth of our city do not devote themselves to such or similar labor.

CHAPMAN, H. L.—Patent Express Wagon Rubber-Springs.

Great advantages over ordinary springs are claimed for this invention. No danger of breakage and great reduction in the price are strong arguments in its favor.

CIPHERS, D. S.—Pop-Corn Machine.

The agreeable yet aggravating scent of pop-corn was continually in the nostrils of the small boy without five cents, who, with the more fortunate ones with coin, continually surrounded this exhibit. The pop-corn man seems to be an almost necessary adjunct of all Fairs and public gatherings, now-a-days.

CIPHERS & GENDER.—Candy Factory.

This exhibit gave visitors a good opportunity of seeing how the various kinds of candies are made, as the whole process, from the melting of the sugar to its final production, as "fancy" and stick, was fully shown. The virtue of self-denial was put to severe tests in front of the display.

CLAIBURN, Miss Bettie.—Knit Quilt.

Made from white cotton thread and very prettily designed.

CLARK, G. W.—Interior Decorations and Window Shades.

Three large rooms papered and frescoed in the most artistic and elaborate manner, with many specimens of rich and elegant wall-papers, borders and window shades, comprised this exhibit. Each room was in a different style, illustrating the resources of the house to design and furnish the most elaborate and beautiful decorations.

CLARK, TRUMAN S. & Son.—Clark's patent Iron Bedsteads with Woven Wire Mattresses, Woven Wire Mattresses, patent Folding Camp Cots, Burr patent Parlor Folding Bed, patent Kitchen Cabinet, Hair Mattresses.

A specialty of this exhibit was the manufacture in the Pavilion of their Woven Wire Mattresses, which was done by an ingenious machine under the supervision of a young lady, and in daily operation. Their folding beds are a miracle of compactness when closed, and, when open, furnish luxurious couches, firm, and in size equal to an ordinary bed. They are made to resemble when closed, desks, wardrobes or book cases, and are fine specimens of cabinet work.

CASSELMAN, E.—Sacramento Hops.

This exhibit was the product of one hill of hops, and covered a pole twelve feet long with a perfect coating of hop clusters thirty inches in diameter with not a leaf in sight.

CLUNDT, Chas.—Fret Saw Work.

His display included many articles of use as well as ornament.

COLMESNIL, J. G.—Ostrich Robe.

It is claimed that this robe has no counterpart on this coast.

COLUMBIA SOAP WORKS.—Soap.

This establishment claims to be the first on this coast to manufacture fine toilet soaps, and of quality to recommend them for successful competition with the factories of the East. Their list embraces a great variety of names and quality, and put up in very attractive boxes and packages. They also manufacture common soaps for all purposes.

COPPAGE, J. W.—Frame of Samples of Machine-made Button Holes.

COTTER, Mrs. J. L.—Frame of Preserved Flowers.

The art of flower preserving has attained its highest point in the hands of Mrs. Cotter, and her services are in demand by those who wish to retain in their natural form the last floral tributes left by loving hands to departed friends.

CRESWELL, Mrs. Leslie.—Crocheted Bed Spread.

These spreads, like others of the same class, are highly ornamental, but seldom put to practical use.

CURTIS, Edward.—Canoe.

This Canoe is an exact model, and made from a piece of the original one that carried the celebrated Indian Chief "Flying Wind" over the falls of the Cow slap river.

CROWLEY, Mrs. Thomas.—Needle-worked Counterpane.

Made with infinite care and an immense amount of labor.

DABNEY, Garland A.—Buggy made of Iron Gas Pipe, Combination Churn and Ice Cream Freezer, with Pendulum Reverse Motion.

This novelty in the construction of Buggies attracted much attention for its originality, nearly every part being made from gas pipe. The Churn and Ice Cream Freezer, two in one, possess many points of novelty, and is very ingenious in construction.

DAMPF, Louis.—Picture Frames, Passe-Partouts, Engraving and Oil Paintings.

Mr. Dampf is a thorough workman, and gives the business his constant supervision. His gilded frames are heavy, finely-finished, firm and durable, and, unlike most such work, will stand cleaning with hot water. The elegance and style of his work is sufficiently evidenced by his exhibit of large gilded frames of various patterns, fine satin and silk velvet passe-partouts, easels, music stands, etc. His work can be found in the dwellings of all classes, from the humble citizen to the Railroad King.

DE LONG, Francis.—Cider and Vinegar.

This exhibit was the succession of a display which has been made for years by Messrs. Sweetzer & De Long, and now continued by Francis De Long the successor in interest to the celebrated Novato Ranch, in Marin County, on which is an orchard of over 200 acres. From the commencement it has been the practice to use none but sound, clean apples, and make pure cider and pure cider vinegar without any foreign ingredients or doctoring. Following this practice for years has given them and their "cider from the Novato Ranch" a State reputation, and a demand for Novato Ranch Cider which is far beyond the supply. For this year's crop, orders are registered ahead and filled only when the ripeness of the apple, proper age and racking of the cider, has been completed.

DEWEY & CO.—Publishers. The *Mechanics' Fair Daily.*

Of this newspaper (issued every evening at 7:30 o'clock,) a large edition was circulated free during each evening of the Fair. Size of single sheet 23x32 inches; double sheet 32x46. The publishers aimed to give a concise description of the most important inventions and articles on exhibition, penned by able writers and reporters; also, brief items of the latest news, humorous paragraphs, incidents of the Fair, programme of music for each day and evening, and all official announcements of the Managers of the Fair. They also exhibited bound volumes of their publications, the *Mining and Scientific Press, Pacific Rural Press* and *Fair Daily;* also, Dewey's Patent File-holder and models of Patents and Pacific Coast inventions, for which they are Patent Solicitors.

DE GUERRE & DE LANO.—Adjustable Device for Turning Curves on Cable Roads.

This mechanism is very simple, and consists of trucks set in a vertical track, on whose axis revolve small training sheaves which support the cable and allow the grip to work freely. On the connecting bar of these trucks are fastened small nibs or projections which are engaged by the grip and carry the endless train of trucks around the curve, the principle being the same as that of a large pulley, with the exception that it revolves on a segment of its periphery instead of its axis. The advantages claimed are: The friction is less than with stationary sheaves; the cable maintains the same position at all times; cars may be run either way; and the cable may be gripped or released at any and all points the same as on a straight track, thereby allowing the car to stop at any point on the curve.

DE GUERRE & DE LANO.—Adjustable Fire Grate.

This grate can be made to fit any stove, and raised or lowered to suit all manner of cooking. By its use a large per cent. of fuel can be saved.

DENNISTON, E. G.—Electro-Plating.

The days of solid plate, gold or silver, are passed. Even among the aristocracy heavy plated ware is fast displacing the old fashioned solid plate of our forefathers. Plate, upon white metal base, is better for most uses than solid ware, and may be changed with the style at less expense, and cannot, by one in a hundred be distinguished from solid ware. The repairing and replating of old ware has become quite an industry, and in no place in the city is it carried on more advantageously to the patrons than at the plating works of E. G. Denniston. His display of a large case of repaired and replated goods, and another of new goods from his factory show what he can do in the line of household ware, while the huge Copper, silver-plated amalgamating plate 4x6 feet, in the Mining Department, represents this branch of his business. The advantages of these latter plates are so manifold that they are being very generally adopted by our best mill-men. They will hold more quicksilver than any unplated or plain copper plate, and the gold is more easily removed when desired. Mr. Denniston sends silver-plated trial plates to responsible parties free on application, and warrants all his goods. His establishment is extensive, and for generating the galvanic current, a large Weston dynamo-electric machine is used. Everything of the metal kind can be plated at his establishment, with either gold, silver or nickel.

DILLA, D. N.—Lewis' Combination Fire Extinguisher; Combination Force Pump; Exterminator and Injector.

This exhibit consists of a hand pump, combining three instruments in one, that, to the farmer, gardener or horticulturist, are invaluable.

DODGE, M. B.—Patent Rock-Breaker.

This well-known Rock Breaker is now in general use on this coast, and the demand constantly increasing. It is strong in construction, simple in action, and a Californian invention and manufacture.

DOMETT, E. M.—Display of Blanchard's Foods.

DOWNING, A. F. & Son.—Murray & Lanman's Florida Water, Perfumery, Samples of Liebig & Co's. Coca Beef Tonic.

Nicely arranged, and comprising in addition a choice collection of Soaps and Toilet Articles. The perfumes were in beautiful bottles and boxes, some of the latter being lined with satin, plush and seal skin.

DROUILHAT, J.—Billiard Tables.

These tables were of home manufacture, and comprised several different styles, of approved construction and fine finish.

DUNBAR, Ella F.—String of Buttons.

It contained 1,183 different specimens.

DUNLAN, Thomas.—Tenoning Machine.

A new and recent Californian invention, but was not in operation.

DUNDON, Patrick F.—Smoke Burning Furnace, used in the Furnace of the Boilers supplying Steam for the Exhibition.

This invention consists in the construction of a furnace with bridge-wall built in circular form corresponding to the outer circle of the shell of the boiler, or the crown of the furnace, as the case may be, and equally distant from the bottom of the boiler, or crown of furnace. At all points the front of the bridge-wall, or the face towards the fire door, is formed so as to overhang or curve towards the door. In addition to this there are a number of small flue-holes or perforations formed in the bridge-wall below the overhang, those flues or perforations to be pointed obliquely upwards towards the back. The size of the perforations is about three inches square or round, about ten inch number in a single furnace. The distance between the top of bridge-wall and boiler is regulated by the area of return tubes or flues in boiler, viz: the area of space between top of bridge-wall and boiler and the area of perforations in bridge-wall, both added, to be 1.75, the area of tubes in boiler. This insures an easy draught. In addition to this bridge-wall, the size of the furnace is contracted at the grate and widening towards the top. Then, in the front upper corner of the furnace there is a steam-jet pipe placed across the width of the furnace. This pipe is perforated with one row of holes 1-16 inch in diameter, and about three inches apart. The pipe is set so that when the force of steam is admitted, the blast will play upon the fire about six inches forward of the end of the grates. Steam is supplied to this pipe by branch pipes leading from the steam space of the boiler, and provided with stop valve. The operation is as follows: When the blast is introduced it catches and forces the smoke, soot and combustible gases against the bridge-wall and they are thereby forced to follow the face of the wall before they can escape over it, and are thus forced back toward the front of the furnace by the forward curve of the bridge-wall, and, in coming forward, pass over that portion of the fire which is kept incandescent by the blast and is thereby ignited; the oblique holes in the bridge being situated close to the incandescent portion of the fire is supplied with live flame, which readily catches and ignites any smoke or gases that may escape over the bridge. The object of contracting the sides of the furnace, as described, is to give the flames and gases room for expansion, as they rise from the grates, and thereby get a more complete combustion of the gases in the furnace. The result of the experiment during the Fair is claimed by the inventor to show a saving of 42 per cent. over previous years by the use of this furnace.

DUROSE, F. F.—Inlaid Box.

This box is about 16 inches in length, 7 inches in depth, and 10 inches wide, and inlaid with over 4,000 different pieces of wood, cut in squares, diamonds, and other shapes, shaded to represent block work, smooth and elegant.

DYE, Eland.—Sectional Ladder Fire-Escape.

This invention consists of three sections of ladders sliding into each other telescopically, and worked by a windlass at the foot. It was greatly appreciated by small boys who were never weary with being hoisted up and down by the accommodating inventor.

DWYER, Agnes M.—Two Lace Pillow-Shams.

These articles are a source of great pride to women, but rarely appreciated by men, if obliged to remove them.

DYKES, H. J.—Air-Cooler and Purifier.

This invention is intended for cooling and purifying air, to be used in sick rooms or in sleeping rooms. It consists in the employment of a rotating cylinder mounted upon supporting rollers and having its interior subdivided so that one compartment may be filled with a refrigerating compound, while air may be driven through the other part so as to pass over the cold surfaces, and thus have its heat abstracted. It may pass over or through lime, lime water or other material, by which it will be freed from its carbonic acid and other impurities, and it may be returned into the room to be used over again. The air is caused to circulate by the movement of a rotary fan-blower or other air forcing apparatus, which is driven by means of a clock-work or other mechanism, and draws the air into the room, passes it through the cylinder, and returns it to the room again.

EISEN, Bros.—Display of California Wines.

This exhibit comprised a great variety of wines, but only placed in position near the close of the Fair.

ELAND, R.—Wilson's Pacific Gas and Water-Sealing Trap.

At the last exhibition this trap was thoroughly examined by a Committee, and awarded a premium for its excellent qualities.

ELLIOT, E.—Patent Arch Fire Kindlers.

Over one hundred thousand feet of pine lumber is annually used in the manufacture of this article in this city. They are cheap, convenient and the demand is steadily increasing. One kindler is sufficient to start any coal fire, or remove the chill from a room in this mild climate.

ELMS, John.—Dolly-Varden Carpet.

Made from Brussels carpet and composed of over 500 small pieces of different patterns sewed together.

ENGELKEN, Mrs. F.—Wax Work.

Wreath of Flowers, in frame.

ERICKSON, Miss Josie.—Crochet Spread.

Made from fine cotton, and with much patience and skill.

ERDIN, Theodore.—Patent Kitchen Table.

This useful and almost indispensable article for the kitchen, where its convenience has been tried, is having a large sale both here and throughout the State. The saving in groceries effected by its use would soon pay for it, besides saving labor, and lightening the cares of the household.

ESCHE & JACOBY.—Ornamental and Stained Glass, mostly Architectural.

Imported from Germany and attracting much attention from its beauty and novelty; chemical action being the principal agent used in its production.

EVANS, J. J.—Stationery and Patent Mailing Boxes

Also exhibitor and agent of the Automatic Shading Pen, by which the most elegant lettering is done rapidly and with but short practice.

EVERTZ, J. P.—List and Rag-Carpet.

That brought back to the recollection of many visitors the memory of the good old days when a nice new rag-carpet for the front room, made and woven during long winter evenings, was the joy and pride of the thrifty housewife. The manufacture of this article in the State is constantly increasing, and should be encouraged, as thereby much otherwise waste material is utilized and habits of industry formed.

EWING, Geo.—Milk Wagons.

Fully equipped with their complement of cans, well-made and elegantly finished. The iron work was particularly well done and adapted to hard usage.

FALKENSTEIN & Co.—Show Cases of Cigars and Tobacco.

This firm is the local agent of Sutro & Newmark, of New York, who employ only white labor, and have constantly at work one thousand operatives.

FARRAR, B. F.—Spring Beds, Mattresses and Furniture.

All of good material and home manufacture.

FIGER Bros.—Display of Brushes and their Manufacture.

One of the most attractive exhibits to the observant mind was this display of clever handiwork, whereby common hair and bristles were dextrously assorted and made into articles of use and beauty. Brushes of all grades, from the largest white-wash brush to the tiny camel's hair, are manufactured by this energetic firm, who, by energy and perseverance, have established their business on a sound footing. They also manufacture a carpet-sweeper of their own invention and patent that has no equal in the market.

FISHER, Mrs. Abbie.—Preserves, Jams and Sauces.

All made by herself. Mrs. Fisher is a colored woman from the South, who, by energy and business tact, has built up a large and remunerative business in the preparation of articles of which she alone has the receipt. Her pickles and sauces have a piquancy and flavor seldom equalled, and, when once tasted, not soon forgotten.

FISHER, A. A.—American Sewing Machines, Hand Machine, Button Hole Machine.

This department was attended by skilled operatives who willingly and politely explained to visitors the machines and their points of excellence.

FOWLAR, Wm.—Model of a Ship.

Full rigged and enclosed in a glass case.

FLOURNOY, Mrs. George.—Bedspread made in 1817 by Mrs. Jas. S. Holman, of Texas, when 13 years of age.

This venerable relic of a by-gone generation may yet delight the eye of those unborn, as such articles seem to survive death and time, in a wonderful degree.

FOWZER & Co.—Scenic Backgrounds.

Made from papier-maché and wood, and designed for theaters, photographic studios, amateur theatricals, etc. Much artistic taste, in design and construction was displayed in this new branch of industry. Private houses or societies can now, in an hour or two and for a small sum, construct a full-set stage or transform a room into a representation of a tropic summer or an arctic winter by the aid of these scenic properties, without injury or annoyance.

FOYE BROS—Manufactures of the Dixon Crucible Co., consisting of Pencils, Lubricators, Shoe Dressing, Axle Grease, Bixby's Blacking, Crucibles, and many other articles.

This Company's goods are rapidly winning their way to public favor, giving the best of satisfaction wherever used.

FOYE, William H.—Franklin Rotary Plow.

The "Franklin Rotary Plow" is covered by three patents issued to William H. Foye, of San Francisco, Cal., in the years 1875, 1876 and 1881, and attracted much attention from Ranchmen and owners of land. The following description by the inventor fully explains its workings and advantages:

"It provides a cheap, simple and efficient rotary plow, capable of adjustment for general use in all varieties of soils, and adapted for operation by horse or steam power, so as to bring it within the means of small as well as large farmers."

"It is especially designed for localities where the soil becomes hard and parched during dry seasons, and wet and soft during rainy ones, its construction being such as to lift and turn the soil properly, whether wet or dry, and pulverize it to any required depth at any season of the year. It is specially adapted to dry-plowing, or for summer fallowing, which forms so necessary and profitable a feature of agriculture.

"A series of concavo-convex cutting-blades are arranged spirally around a supporting and driving shaft, so that, when the shaft is drawn forward, the convex edges of the blades must enter the ground with a smooth shearing cut, quite unlike the scraping and grinding action of the old style of wedge-plow, separating and lifting the soil, which is caught by the concave faces, and by them turned and dropped into furrows in the rear, as the plow advances. The spirally-curved steel cutting edge, formed of narrow steel strips, can, when worn, be readily renewed without disturbing any other part of the machine. The cut and width of the furrows is regulated in accordance with the character of the surface, by the adjustable pitch given to the two sets of spiral cutting-blades upon the shaft; these curve in opposite directions from the center, forming right and left spiral cutters, thus preventing the machine, when drawn forward through the ground, from deviating towards either side from the line of draft. The two cylinders, each inter-changeable and operating against the other, are susceptible of various re-adjustments, such as throwing the soil outward or inward, or to cut deep, or be used as a harrow.

"The rotary plow exhibited in the Fair, and now working with perfect success upon the farm of Hon. T. G. Phelps, at Belmont, is composed of two cylinders, fully four feet in diameter, which each cut eight feet six inches wide. The pitch of the screw, being one turn in two feet, causes the blades to stand nearly upright, and the angle at which they set to the shaft is nearly thirty degrees. As the cylinder rotates over the surface, the sharp cutting edges of these blades are forced to enter the ground by the action of the screw, with a smooth shearing cut, separating the soil, slightly lifting it, and turning it upside down in furrows behind the plow, the entire cut being seventeen feet wide.

"It now plows readily twenty acres a day, with one man and four horses, and completely cuts up sods, weeds and grass-roots, killing out the foul seed and causing land to yield heavier crops. The lighter plows are adapted to the cultivation of vineyards, saving three-fourths of the labor spent in plowing the old way.

"Mr. Phelps, who is now using this one, thinks it reduces the expense of putting in a crop to about one-fourth what it costs with wedge plows. He acknowledges it is a new departure in agriculture, and calls it the greatest agricultural improvement of the age, for it is not only cheaper, but it pulverizes and seeds the ground in better shape. It is not a heavy-going machine, and is calculated to save its cost annually over the expense by the old method. It is suitable for use all the year, for wet or dry plowing, and will cut up a brick yard if required. It can be used as a harrow and seeding machine, or as a cultivator, being easily gauged to any required depth, pulverizing the soil so thoroughly that not a lump can be seen as large as a hen's egg. It shows little if any wear, and saves labor and time when most needed. It is especially adapted to tule lands, as the smooth shearing cut with which the blades enter the ground, separates and easily cuts up the tough and soddy soil, clearing and separating the fibrous network instead of being dragged forcibly through it, as formerly. This machine, by reducing the expense and risk of farming, is calculated to work an entire revolution in the present modes of plowing ground."

FRANKHEIMER, JOSEPH.—Aquarium.

With various compartments ingeniously connected.

FRANCO-AMERICAN PERFUMERY CO.—Perfumes and Florida Water.

This establishment is now firmly fixed and supplying a large amount of the Perfumes used on this Coast.

FRANETTA, J. & CO.—Cigarettes, Turkish and Virginia Tobacco.

This was the only full and comprehensive display of that weed in the Fair; in fact one of the finest ever made in San Francisco. A large force of girls is employed by them in the manufacture of all varieties of tobacco and cigarettes. Of the latter the brands of 4 U, Imperiales, I X L, St. Petersburg, Nationales and Carnivals, are the most noted. A fine line of Enterprise Cheroots with Havana fillers were also displayed. Tobaccos in every form were tastefully arranged, including long and straight cut from the best Virginia leaf, and a rich lot of Turkish, known as Dubec, Basuna, Samson, Besarabia and Caucasia.

FREUD, M. & SON.—Corsets.

Every variety of Corset was included in this display, comprising the finest French-sewed and woven as well as the best American. Many of the finest are made by the firm here in San Francisco, and are models of beauty and workmanship. The display included many new designs not in other houses, patented corsets in great variety, and other articles for the improvement and comfort of the female form.

FRUIT DISPLAY BY MECHANICS' FAIR.

No premiums were offered for fruits this year, and therefore no great display was expected. Yet, notwithstanding, a large number of the most important fruit-growers of the State, recognizing the advantages of having their names and products before the public, forwarded, in quantity and quality, sufficient to make a most creditable display, which was duly appreciated by many thousands of visitors who were never tired of examining and praising the products of our California orchards and vineyards. It is much to be regretted there was no greater display of canned fruits, vegetables or dried fruits from our large establishments, so that the public could gain an adequate idea of their capabilities.

There is no one industry which promises so large and profitable results, and for which California climate and soil is so naturally adapted, as the raising of fruit and its preservation for consumption out of season. The State contains several very extensive factories devoted to this industry, and their product finds a market all over the world. And yet, not one of them makes a showing in the Pavilion except King, Morse & Co., and they only of can-making the part of the business the least cared for by the public. In former years some growing men have gone in with large display of canned and other goods, in the fruit line mostly, of home production. But this is not as appropriate as would be a 20-foot square pyramid embellished with rows of bottles and cans from our great canneries. Apricots, peaches, strawberries, raspberries, blackberries, cherries, pears, nectarines, plums, prunes, raisins, corn, beans, peas, tomatoes, rhubarb, each in its appropriate form, and some in the several forms of fruit, jam, jelly and preserve, would make a pyramid of beauty and use that might be pointed at with pride by any Californian. There were, however, two exhibits of canned and preserved fruits, by private individuals.

Burco, Anton, San Miguel—A large drum head Cabbage.

Collins, J. A., Vacaville—Muscat, Muscadine and Tokay grapes.

Crawford, A., Sebastopol—Fine large Gravenstein apples, many weighing nearly one pound, and beautifully colored.

El Dorado Fruit Company exhibited some very fine Orange Cling Peaches, large, smooth and richly colored; also some Coe's Golden Drop Plums, Wilcox Cling, and specimens of sun-dried plums, peaches and apples, all of good flavor and body.

Eveleth & Nash, from the ranch of G. R. Rowland, Green Valley, Sonoma county. Twenty-ounce and Holland Pippins, Pennock and Gravenstein apples, the latter beautifully colored.

Hanna, John, Anaheim, Lemons that would compare favorably with the best Sicily.

Hickson, Justi & Co. sent some very fine sweet potatoes, quinces and pears from the ranch of J. Collins, Sacramento river.

Hinclay, Geo. W., from his Highland Fruit Gardens, near Winters, Solano County, sent several new varieties of peaches brought from the State of Georgia, among them the Great Eastern Solway and Piquet's Late, freestones, and were particularly fine, being grown on mountain land without irrigation. Mr. Hinclay's specialty is peach culture, and his products would be hard to equal.

Jessup, W. H., Haywards, Alameda Co., Hungarian Prunes. One specimen was a branch three-fourths of an inch in diameter, loaded with large and handsome fruit, 72 in number, and weighing from three to five ounces each. Mr. Jessup has this year from his farm, of only 18 acres, sold of cherries alone 55,000 pounds, of which 22,500 pounds of the light varieties were gathered from three acres.

McKevett, Mr., of Vacaville, sent several bunches of Rose of Peru grapes.

Messenger, J., Calaveras County, Peaches.

Neuman, Gustave, of this city, had a fair collection in jars of a great variety of fruit, well preserved, and of fine appearance.

Prettyman, H. W.—Portland or Oregon apples of fine flavor.

Quinn, H., Chinese Camp, Mountain Muscat Grapes and fine Peaches.

Raymond, Jules, Chinese Camp, fine Oranges.

Rhodes, W. L., Yolo County, Peaches.

Runyon, Sol., Sacramento river, Lemon Cling Peaches.

Runyon, Mrs. Sol., Sacramento river, had twenty-six varieties of fruit jelly consisting of quinces, pears, apples, peach, grapes and berries, in endless beauty and excellence, making an array of housewifely industry and skill that may well be the envy of the ladies of the city.

Wood, T. S.—Stockton, Black Morrocco grapes.

FULLER, Geo. H.—School Desks, Settees, Blackboards and Teachers' Desks in a variety of styles and of California manufacture; one office Desk, the "Californian," with flexible cylinder, adjustable compartments, slides and drawers; one Counting House, "King of Desks" (Moore's patent); Invalid wheel and Reclining Chairs (New Haven patent); Bed Rests, Commodes; Blacking Cases and Music Stands; also Maps, Globes and Charts, and a full display of Rattan Furniture, comprising Sofas, patent and plain Rockers, Chairs, Workstands, Music and Paper Holders, Upholstered Chairs and Cribs.

FEDERMYER, L. P.—Hair pictures.

Notable examples of what patience and art may accomplish.

At a short distance they would be taken for Crayon pictures; but a closer inspection shows them composed of human hair entirely, and blended in so carefully as to graduate the shades of the picture from the merest suggestion of color to the heavy lines of eyebrows and other shaded parts; while the beard, hair and clothing are more faithfully represented than pen or pencil can portray. His work is of the highest order of merit, enabling us to retain mementoes of the departed in a beautiful and faithful manner.

GALE, Nellie.—String of Buttons.

An exhibit of no merit and out of place in a Mechanics' Fair.

GARLAND, C. M.—The Garland Sewer Gas Trap.

This trap in the minds of many possesses points of improvement over any other in use, and has been highly commended by architects as a good sanitary trap.

GARRETT, W. T.—Hooker's Steam Pumps, all sizes, double and single acting; Boiler Feed Plunger Pumps; Safety Valves for Steam Boilers; Boiler Injector "Little Giant;" Low Water Indicator; Lifting Jack for Mills and Lumber Men; Street Fire Hydrants; Hose Couplings; Iron Flanged Globe Valves, Outside Screw, Finished; Sample Wrought Iron Pipes and Boiler and Brass Tubing; Sample Glass Tubes for Tanks; Coffin's Patent Water and Gas Gates; Root's Patent Portable Forge and Blowers; Stoddard's Patent Steam Condenser; 1st Commercial Copper, of California production and California refined; Bells, Gongs for Steamboats and Miners; Assortment of Steam and Plumbers' Brass Goods; Hydraulic Nozzles and Joints; Brass, Double and Single Acting Wine Pumps; Steam Gauges; Water Gauges, witb Scotch Glass Tubes; Lubricators and Oilers, Railroad Journal Metal.

This was the largest exhibit of California manufactured articles at the fair, and received the Institute's medal. (See report of Committee.) The arranging and fitting up of this display was superintended by Mr. A. F. Allen, by whose good taste and judgment the goods were displayed to their best advantage. Mr. Garratt commenced business in this State in 1850, and it has ever since ranked as the largest brass establishment on this coast. He keeps over one hundred men constantly employed, and is now enlarging his works and fitting up machinery for fifty more. A large amount of the raw material used in his business is from the mines of this coast, he doing everything in his power to aid and develop home industries.

GATES, J. H.—Pepsin Wine Bitters.

Manufactured from pure California Native Port Wines, Wine of Pepsin and Peruvian Bark, and of value to the dyspeptic and debilitated.

GEBLER, Theo.—Dress Cutting System.

Done by the inch or tape measurement, and guaranteed to fit. The chart of instruction is only 6x18 inches.

GILETTE, G. W.—Hand Ice Machine.

This is a new and novel machine which demonstrated a fact that every family can have new-made ice daily. Experimental tests made each day proved this machine capable of making the best quality of ice in 40 minutes. This machine is not complicated, but is simple in construction. Any one can handle it, and it is placed at a price that every household can have one. As it deserved, it attracted a great deal of attention and favorable comment while performing its work of making ice.

GILLETTE, Miss Ella.—Worsted Wreath made of Colored Wools, and very pretty.

GIANT POWDER CO.—Samples of their Powder in such forms and packages as suitable for general use.

This Powder is now well known and in general use throughout the world. Bandmann, Neilsen & Co. are the Agents for this Coast.

GOOD, A.—Good's patent Parlor Grate and Damper for the saving of fuel and the more even distribution of heat.

GOODRICH, Taylor.—Stoves, Ranges, Stove Furniture and American Coffee Pots.

The Magee Ranges exhibited by him are a favorite in this market, and have an extensive sale. Many useful and important improvements are yearly invented and added to our cooking apparatus, whereby fuel and labor are reduced and conveniences increased.

THE GOODWIN GAS STOVE AND METER CO.—Gas Stoves.

Those for parlor and office use were particularly attractive, being lined with polished copper on the inside, which gave the appearance of a bright fire when the gas was lighted.

GORDON HARDWARE CO.

Gave an interesting exhibition each afternoon and evening, of the manufacture of chain. This Company deal extensively in general hardware, and carry a large stock at their place of business, yet make a specialty of manufacturing cable chain of various sizes for all the manifold uses, where absolute safety under a given strain is required. They use the best of material, and any one can see that the links are well formed and welded, desideratums of the first consequence generally found lacking in the ordinary factory or penitentiary, made cables.

GRAVE & Co.—Display of Carriages, Buggies, and the Oppenheim Buggy.

Probably no exhibit in the Fair would better show the advancement and improvement of Mechanic Art, from the primitive age to the present, than to have the rude carts and chariots of that period contrasted with the elegant, strong and luxurious vehicles of this display, and which, in every respect, is a credit and honor to the firm who exhibited, and the workmen who have wrought and produced with such skill and success these beautiful products of industry for the convenience and pleasure of man.

GRESSLE, Henry.—Specimens of Wood Carving. Consisting of a Woodcock, Lizard and Pipe.

These articles evince much talent and patient labor, as the feathers in the bird are carefully, neatly, yet naturally cut, clear and concise in lines, yet not stiff or hard. The whole is a highly artistic exhibit, and would win high praise at any Exposition.

GUMP, S. & G. & Co.—Mirrors, Ebony Cabinets, Statuary, Gilt Bouquet Tables, Cornices, Steel Engravings, Water-Colored Engravings, Oleographs, Chromos, Gold, Oxydized Gold and Fancy Velvet Picture Frames, and Bric-a-Brac.

This display was an art exhibition in itself, where the artistic and lovers of the beautiful loved to linger. The whole was arranged in perfect taste, and comprised but a few of the samples of their large establishment.

GUMPERTZ & BROOKS.—Household Decorations.

Consisting of a room finished in the highest style of wall paper decoration. A specialty was their all hand-work window-shades, that are rarely equalled for beauty and finish.

This display received much attention and praise, and the success accorded them is well deserved for their efforts to cultivate a higher artistic taste in the household.

GUNDLACH, J. & Co.—Display of California Wines.

Well displayed and characteristically arranged. The center piece was an immense oak tun, made especially for this exhibit, on which a platform was placed, and on that was formed an immense pyramid of bottles containing samples of all known varieties of California still wines, both red and white, and the product of their vineyard in Sonoma County, known as the Rhine Farm.

HAGANS, G. W.—Music Type, Music Plates and Sheet Music; California Composition.

The improvements that have been made in Music Type enables the typographer to indicate all the characters known in Music compositions, therefore the sheet music exhibited by him had a fine finish, clear, distinct and easily read. During the exhibition he published several songs and instrumental pieces to show visitors the skill and workmanship required to produce, and the style and taste displayed in the finished work.

HALE, LOCH & Co.—Chicago Steel Horse Shoes of various sizes.

HALLIDIE, A. S.—Wire Rope, Cables, Clothes Lines and Picture Cord.

Mr. Hallidie's exhibit was arranged on a large platform, 20x30, railed around, and leaving three arched entrances. This railing and the arches were crowned with an immense wire cable six inches in diameter. Eight drums of wire cable of different sizes filled part of the platform, while pyramids of coil wire, six feet high, tapering in size of coil and wire, occupied either corner. Through the center extended a rack filled with small drums of wire and wire cordage, of copper, steel and iron. Altogether, it formed a magnificent display of what his factory, at the corner of Sansome and Vallejo streets, is every day furnishing the industrial world.

HARASZTHY, Arpad—Wines, Champagnes, Brandies and Bitters.

Comprising over 400 bottles and representing 25 varieties; 20 of still wines red and white, 3 of champagne and 2 of brandy, nicely arranged in rows one above the other, reaching a height of 15 feet from the floor. In the center was a small oak keg beautifully made and bound with silver hoops. Interspersed throughout were engravings suggestive of grape-growing and winemaking. Of the varieties of white wines exhibited were Gutedel, Riesling, White Zinfandel. Among the red wines Zinfandel, from the Hungarian grape of that name, was the principal one. There were also several varieties from Rhenish grapes, such as Sonoma, Hock and others. A special feature of the display was his champagnes, of which Dry Eclipse is the most noted and now well-known the world over.

HANFORD, John.—Plant's Patent Amalgamator.

HARRIS, James & Co.--Dry Gold Separator; Tubular and Angle Iron Harrow.

This separator, as its name indicates, is intended to work auriferous earth without water. There are many places in Arizona, New Mexico and Mexico where the surface dirt is gold bearing, but where there is no water with which to work it. The old Mexican plan is very crude. It consists in winnowing or throwing the earth up and down on a raw hide in the wind, the nuggets being saved. Of course this will only do with coarse gold. Modern invention has elaborated this crude idea, however, in such a way that earth containing fine particles of gold can be utilized, and not only the nuggets but the finer gold be saved.

The Harris machine is so constructed as to have two currents of air, one to agitate the material and the other to carry off the dross while the gold is being separated. The machine has a good solid frame, bolted together with rods, and can be readily taken apart and put together. The earth is poured into a hopper, and falling from the hopper to the riffle board it passes through a current of air from a rotary fan behind the hopper. The riffle board is composed of drilling or canvas stretched over a wire screen or frame, under which is a bellows, worked by the same mechanism as the blower. This bellows blows a pulsating, intermittent blast up through the riffle bed, agitating the earth that has fallen there, and carrying on a sort of process of concentration. The finer particles of dirt and dust are blown away by the blower before falling to the bed; but this agitation throws up some fine particles into the upper blast which carries them away. Riffles are placed at suitable distances apart on the riffle bed, and behind these the gold catches.

The difficulty with most of the dry washers is a tendency of the dirt to pack. In this the finest of the dust is thrown away before reaching the riffle board, so there is, of course, no chance for that to pack. Neither water nor quicksilver are necessary to work dirt with this machine. They are made of tubular iron, with no cogs or cast iron to wear out or break. An adjustable round belt runs the machinery, so there are no gears. The capacity is said to be from 30 to 40 tons per day of ten hours, according to kind and nature of soil. They are to run by hand, though large ones are made to run wtth steam or horse power.

HAROLD, Jr., John & Co.—Samples of Empire Extract of Malt.

HARTSHORN & McPHUN.—Window Shades, Opaque Shade Cloth and Paper Hangings.

A specialty with this firm is their shades and shade cloth, of which they manufacture large quantities for the trade and for sale, at retail, painted and lettered in any desired manner. They have also a large and well-appointed Oil Cloth factory in successful operation.

HARNEY, Mrs.—Mme. Young's Beaumondaire Zephyr Powder.

HARVEY, C. D.—Hot Water Furnace and Radiators for Heating Buildings.

This method of warming buildings is becoming very generally adopted. An even temperature throughout the building is kept with but little labor and fuel, and saves the dirt and annoyance of kindling fires, noxious gases and cleaning grates. The furnace is safe and simple in construction, and is in use in many of our State Institutions, and large public and private buildings.

HAULFUSS, F. C.—Glass Engraver.

By the aid of a foot-lathe and the proper stones, goblets or glasses of any kind were skillfully cut or engraved with such name, monogram or design as visitors desired. His stand was constantly surrounded by the curious to witness with what skill and ease a master-hand with so clumsy an instrument as a revolving stone could mark such graceful curves and delicate lines.

HAWKINS, Thos.—Compound Rotary Engine.

This was only a model or very small engine, and worked with indifferent success.

HAWLEY, M. C. & Co.—Rice Straw-burner Engine, Garr Scott Wood-burner Engine; Canton Pitts Separator; Buckeye Self-rake Reaper; Buckeye Mowers; John Deere Plows; South Bend Chilled Plows; Buckeye Gang Plows; Gilpin Sulky Plows; Cider Mills; Howe's Scales; Enterprise Coffee Mills; Champion Fan Mill; Challenge Feed Mill; Burdick Hay Cutters; Garfield Mill; Cider Press; Hitching Posts; Lawn Mowers; Swinging Churn; Cream Cooler; Butter Worker; Sawing Machine; Farm Bells; Weather Vanes; Balls for pole; Advance Cultivator; Sulky Rakes; Pumps with Brass Cylinders; Perkins' Windmill; Dodds' Rakes, Hollingsworth Rake.

As at many former exhibitions, Messrs. Hawley & Co. made a large and comprehensive display of agricultural implements. Their machinery was run by one of their own engines, and the display was one to delight the farmer familiar with their use, and to fill with wonder his city brother who knows nothing of their practical operation. It would be well for parents and educators who have children in their charge to bring them to these Fairs to see and have explained to them the various appliances in use in preparing the ground, planting the seed and reaping the grain of the food we consume; for an hour's observation in that way would teach them more than days of study from books.

HAYES, Thos.—One Worsted Picture.

HARWOOD, Capt. Wm.—Patent Dredger.

Of course this was only a working model, yet its operation and effectiveness was well shown, and no doubt would operate as satisfactorily in actual work. Its working parts are simple and deprived of many of the cumbrous attachments that are a necessity to most of those in use.

HENDY, Joshua.—Automatic Ore Feeder of the "Challenge" and "Roller" patterns, and also the Wilbraham Rotary Piston Pump.

The pump is made on the same general principle as the well-known Baker blower, and it is claimed that the ordinary objections to this class of pumps have been overcome in this. The pump works equally well, run in either way. It will pump hot or cold liquids, delivering a steady and uniform stream, and works under either high or low pressure. It is positive in its action in both lifting and forcing. It has no irregular shape or sliding movements, all working parts being true circles. This Pump has been lately introduced on this coast, though well-known in the East.

HINKLE, Philip.—Patent Air and Water Compression Chamber for Elevators.

This invention is well-known, being in many of the principal houses in the city, and attached to the Elevator in the Fair, which was of his construction and patent, and kept going up and down day and night, carrying from 40 to 50 persons. It is gratifying to know that this Californian invention is coming into general use in the East, agencies being established in all the principal cities. The machinery consists of a steam-pump, a round iron-closed chamber which is one-half filled with water and one-half with air; also, a small wooden water-tank, and a cylinder hoisting machine, through which the power is transmitted from the steam-pump and air chamber to the elevator platform. The operation of this machinery is as follows: Steam is furnished to the steam-pump from the boiler; this works a piston in the water cylinder of the pump and draws water from the wooden tank, and forces it into the iron chamber against the air, which has been previously put in, until, at 80 pounds pressure or thereabout, it is half full of water and one-half of air. A pipe is connected from this water to the elevator valves and cylinder. When the elevator is going up, the water is pressing from this chamber to the cylinder; when the elevator is stopped the water is shut off, and when the elevator is going down it discharges the water out of the cylinder into the wooden tank for the pump to use over again. This makes the elevator work well at very little expense. The accumulator which furnishes the cylinder with water under a pneumatic pressure, gives the elevator steadiness, certainty of hoisting and an elasticity of starting; it is simple, and cannot get out of order. The method of attaching the piston-rod to the hoisting ropes produces equality of rope and tension, and the whole apparatus is simple and efficient.

HORNE, W. J.—Electric Belts, California Electric Trusses.

Electricity is beginning to be recognized by the faculty as an important agent for the cure of chronic diseases, and its application is fast becoming universal in such cases.

HIGGINS, S. C.—Miniature Locomotive.

The miniature locomotive, or "fast mail," running on the elevated railroad in the Fair building, which attracted such universal attention, was built by S. C, Higgins during the leisure moments of three years. It is constructed of the very best materials, all the working portions being of steel. The pistons are fitted with metallic packing rings, being self-adjustable and requiring no attention.

The dimensions of the engine are as follows: diameter of cylinder, 1⅜ inches; length of stroke, two inches; diameter of drivers, five inches; weight of engine and tender, 35 pounds; weight of engine or drivers, 15 pounds; weight of forward trucks, five pounds; length of engine from nose of pilot to rear end of tender, 49 inches; width of track, five inches.

The engine is built on the scale of one inch to one foot, and is as perfect as any locomotive running on the Central Pacific. There are 1800 separate pieces in the engine and tender. The style is after no particular maker, but merely a copy of the best points according to builders' ideas of the locomotives now turned out by the leading manufacturers of the East. This locomotive corresponds to a broad gauge engine of the following dimensions: diameter of drivers, five feet; diameter of cylinders, 17 inches; length of stroke, 24 inches; weight of engine, 35 tons.

This little model made the trip from one end of the track to the other, 440 feet, in one minute and three seconds, making 362 revolutions of drivers in that distance. This, compared to an engine with a five-foot wheel, would be equal to a trifle over a mile a minute for the large engine.

HILL, Mrs. M. E.—Mrs. Moore's Scientific Hair Producer.

HILL, Samuel—New Home Sewing Machine.

Mr. Hill is a veteran exhibitor at these Fairs, and understands how to arrange articles to display to the best advantage.

HORTON, Miss E. L.—Turkish Rugs.

The manufacture of these rugs has become quite popular among the ladies, the work being easy to learn, and useful as well as ornamental when completed. Miss Horton teaches the art, and during the Fair gave a practical illustration of the method.

HUBBARD, Mrs. E. H.—Human Hair Goods.

The aged or prematurely bald need have no particular regret for their condition as far as looks are concerned, for modern skill and science as shown in this exhibit, will supply hair in any quantity and color to supplant the lost article, and so natural in appearance as to almost defy detection.

HUG & WOEBKEN—Sample Boxes.

These boxes were made of paper or pasteboard, of assorted sizes, for a variety of purposes.

HOLMES, H. C. & BOGART.—Grapple for Submerged Piles.

This invention consists of two half rings of wrought iron, two inches thick and eight inches wide, fastened together and hinging on two two-inch steel pins forming a ring about twenty-two inches in diameter, each half-ring having respectively three and four diamond-shaped steel teeth two inches long. At right angles to the line of the hinges, on each half-ring, is a lug to which the lifting rods are fastened with two-inch steel pins, the lifting rods being about thirty feet long, and fastened together at the top and to the running block of the lifting apparatus. There is also an attachment by means of which they are enabled to go below the surface of the mud to secure the stump, consisting of a nozzle fastened to each of the hinge-bolts and connected with a steam or other pump on board the scow, by means of hose, through which a jet of water is thrown, thus scouring away the mud and allowing the grapple to sink. About 2,500 submerged piles at the various wharves along the water front have been removed by this invention in the last four years.

HOOKER, Wm. D.—Steam Fire Engine and Condensing Steam Pump.

This engine, in its construction, is a new departure from the present ones in use. It is direct acting and remarkable for its extreme lightness, the weight being only 3,500 pounds. The engine-cylinder is eight inches in bore, and the pump-cylinder five inches with a twelve-inch stroke, and mounted vertically on the engine frame. The pump is double-acting and has 24 valves, 3½ inches in diameter, that can be removed and replaced in five minutes. The boiler is of an improved style and the coils kept always free of water. The hose connections are on the side. Steam can be raised in five minutes to 145 pounds pressure. Mr. Hooker also exhibited for the first time a new condensing compound steam pump, of an entire different construction from anything now in operation. He is well known as an inventor of hydraulic machinery, of which the Hooker Pump is perhaps the best known, as it is in general use on this coast.

HUNTINGTON, F. A.—Huntington's Patent Oscillating Stamp Mill, Grinding Amalgamating Pan, Patten's Concentrator and Patten's Amalgamator.

Among the new mining and metallurgical appliances which have made their appearance at the Fair this year is this oscillating stamp mill, a new invention, and one out of the ordinary track, being really a stamp without stems, cams or tappets.

It consists essentially of a bifurcated arm; at the upper end of which is the pitman for oscillating it ack and forth. At the lower ends are the shoes, which rest on dies, having inclosed sides or back pieces. As the arm is oscillated, first one shoe strikes and then the other, alternately. By the peculiar construction a grinding as well as a crushing action is maintained. The shoe strikes and crushes the rock and then slides along a little, grinding the crushed rock under it. This combines, therefore, the action of the stamp and arastra, and from its peculiar construction the power required is comparatively light. Among mining men this machine is attracting a great deal of attention. The machine is so arranged that an automatic ore feeder may be used with it. Very little power, comparatively, is required to operate the bifurcated stamp or weight, while its action is very effective. One stamp acts as a fulcrum to raise the other, the action being alternate.

On the vertical sides of this grinding and amalgamating pan, near the bottom, are supported dies, in sections, but like a complete ring, so as to receive the action of the revolving shoes, which are journalled upon vertical spindles. When these are driven by the action of a revolving muller, the shoes are thrown outwardly against the dies, both by centrifugal action and by the resistance of the contents of the pan to wings which project inwardly from the shoe supports. Suitable means are employed to keep up a good circulation in the pan. There is no danger of grinding or flouring mercury with this pan. More or less grinding action may be maintained.

The Patten Rocking and Panning Amalgamator which he exhibits is for saving fine or coarse gold and floured quicksilver. This machine consists of a rocking bed having an amalgamated surface, and the pulp is compelled to pass between two amalgamated surfaces, one above and the other below, so that "float gold" and floated mercury is amalgamated.

The Patten Concentrator combines the rocking and percussion motion, which allows it to be set up with the pulp or gangue discharge end highest—the reverse of other Concentrators—and by this means it is less liable to carry off the mineral with the gangue, and it is enabled to do good work. These machines are all manufactured by Mr. Huntington, at his works on Fremont street.

ICHI BAN.—Japanese Goods.

The meaning of Ichi Ban in Japanese is "first class," as the store from whence this fine exhibit was taken is well known to be. Shattuck & Fletcher, the proprietors, spared no expense in fitting up their display, which occupied a central position and contained almost every variety of the peculiar products of Japanese industries, both useful and ornamental. The whole was extra illuminated by an electric light suspended over the center.

INDIANAPOLIS CHAIR MANUFACTURING CO.—Sofa Bed and Chairs.

This immense establishment in Indiana has branches in almost every large city in the Union, and have unequaled facilities for manufacturing furniture, particularly from black walnut. Their display was taken from the regular stock on hand and not made especially for exhibition purposes.

JACKSON, A.—Calendar Clock.

This clock gives the day of the month and year up to 1999. It also shows the phases of the moon, a result only obtained by exact calculation and an immense amount of mechanical labor. Mr. Jackson is also the inventor and maker of the Astronomical Clock or Pantorologue, exhibited last year.

JACKSON & TRUMAN.—Jackson's Self-feeder for Threshing Machine, High Derrick Self-feeder with Bayley's Spreader; Patent Low Derrick, Elevator with Bayley's Spreader and Self-feeder attached to an Agitator Threshing Machine; Improved California Windmill; Farmers' Iron Blocks; Improved Vineyard or Orchard Harrow; Price Hay Press; Jackson's Light Weight Horse Forks, three to six feet; Patent four-Section 60-Tooth Iron Harrow.

The exhibit of this energetic and successful firm was one of great interest to those interested in the prosperity of our State, and particularly so to agriculturists. The Committee on the Inventor's Medal, after due consideration, awarded them that prize for the best recent California invention. (See report of Committee.) The demand for agricultural implements has steadily grown, as the coast increased in population. The opening up of Arizona by the Southern Pacific Railroad has stimulated the miners, who have created a demand for the products of the farm at large prices. Implements of all kinds find their way from this State, and if manufactured here, successfully compete with Eastern goods, as we make a better article for the style of work required than is made elsewhere. Oregon and Washington Territory are settling up very fast, and they require machinery to harvest their crops. This coast has to compete with the world in the price of wheat, and we must do with machinery what other nations do by low-priced manual labor, in order to lay wheat down in the markets of the world as low as they can. California is noted for having the best farming implements in the world. Headers have been used here almost exclusively in securing the wheat crop, because they could harvest it so much cheaper than by reaping. The last three years have changed this somewhat. The several manufacturers of reaping machines have introduced self-binders—first those which bound with wire, and the last two years the twine binders have taken the lead. In harvesting grain with a binder, it must be cut before it is too ripe, else it shells out, and more or less is wasted. After being cut and bound it has to be hauled to the thresher or stacked in the field. For small farms of, say, one hundred or two hundred acres, this may be the cheapest way, but on large farms it costs about as much to stack the bound grain as to cut and stack with the header, so that it seems that we must use the header as the most economical way of getting the unthreshed grain to the thresher. The mode of threshing grain in the East was too slow for this coast, and numerous inventors and experimenters tried various plans to cheapen the cost of threshing and lessen the labor. Mr. Byron Jackson seems to have struck the right method, and has been granted numerous patents on his inventions, of which those on exhibition practically demonstrated their value and usefulness.

Jackson's Feeder and Elevator with Bayley's Spreader attached, in combination with Jackson's patent Folding Derrick, and Light-weight Horse Forks, are a complete combination for passing headed grain from the stack to the threshing machine. This season it is largely used with steam threshers, therefore unnecessary to draw any comparison between it and the old method of hand-pitching and feeding, especially when the new method is speedier, more thorough and less expensive. The Spreader is to the Thresher what the governor is to the steam engine, completely regulating the supply to the cylinder, and overcoming all objections to the Self-feeder.

They now have a large manufactory on Sixth street, supplied with the best and latest improved wood and iron-working machinery, including an iron foundry and hammer, which enables them to construct on their own premises the above implements, thus insuring their quality, which are fully guaranteed.

JACKSON, Mrs. A.—Hair Wreath.

Showing the most exquisite workmanship and representing a variety of flowers.

JAMES, D. B.—Single Track Railway.

This invention is now in a fair way of being adopted in many localities where a cheap and simple method of transportation is desired. It consists of one line of broad-faced wheels in the center to carry the load, and guide-wheels to run each side of the rail on vertical axles projecting down from the car, the wheels being to keep the carrying wheels on the track and to prevent the cars from overturning, for which they are contrived to grip the rail with more or less force. The wheels are connected with a platform which is carried only enough higher than the rail to clear it properly, and the car is mounted on pivots arranged in the line of the wheels and supported on the platform so that the load is evenly balanced on the wheels and the center of gravity is lowered as much as possible to prevent overturning. The guide wheels running against the sides of the rails are contrived to move forward and from the rail, and provided with springs to keep them in contact. In the locomotive they may be geared with the power, and have a lever contrivance for gripping the rail tightly for traction on steep grades.

JEWETT, SHERMAN S., (Oscar J. Levy, Agent.)—Display of Crowning Glory and Sherman S. Jewett's Ranges and Stoves.

Messrs. Jewett & Co., whose foundry is located in Buffalo, N. Y., is one of the oldest in the United States, and take particular care in the manufacture of stove-ware for this coast. Their exhibit was a fine one and attracted much attention, particularly the Persian Portable Range, with an illuminated front that gave it a most cheerful appearance. This large display is but a part of the samples of their extensive stock now kept on hand and for sale at the store of their enterprising agent.

JOHNSTON, J. J.—Soldering Machines.

Mr. Johnston gave, afternoon and evenings during the entire Fair, a most interesting exhibition of the manufacture of tin cans, wherein his soldering machines played an important part. Many thousands were made, and the process watched with much interest by interested visitors, particularly as a rival machine, and the hand method, were operating in close proximity. The soldering is done on this machine by sinking the end of the can into the molten solder deep enough to cover the joint.

JOY, E. W.—Joy's Florida Water and Joy's Emulsion of Cod Liver Oil with Hypophosphites.

The preparation last named is an entirely new article, as made according to Mr. Joy's recent discovery. The preparation is made efficacious in many cases where other preparations of Cod Liver Oil would fail to restore. It is as yet only made in this State, and by Mr. Joy. Its use is rapidly extending, as its virtues become known. Mr. Joy also had a small fountain ejecting perfumed water, wherein great and small were privileged to saturate handkerchiefs without regard to size, color or cleanliness.

JONES, Mrs. E. F.—Bed Spread, Pillow Shams, and String of Buttons.

These three articles might properly be classed us useful, pretty and valueless.

JOSEPHI, Mrs. C.—Green Silk Pelisse, worn by a lady.

This garment had nothing in the world to commend it except its associations, which were of no interest to the public, and displayed a questionable taste in the exhibitor.

KAHNWEILER, David.—Never Sink Cork Jackets.

When this jacket is properly adjusted to the person, it interferes but little with the movement of the arms, and cannot get out of place, the great fault with most life preservers.

KEARNS & CALDWELL.—Adjustable Fire Grate.

A great fault with common stoves and ranges in this climate, where a constant fire is not required, is the depth of the furnace, whereby a large amount of fuel is necessary to bring the live coal near the openings, when broiling or quick cooking is being done. It has been partially remedied by false grates, three or four inches in height, but which is a great inconvenience when cleaning out ashes. This invention raises the grate to any required height by the simple motion of a lever. and, in like manner, depresses it to the bottom. It can be attached with but little trouble to any stove or range.

KELLY, P.—Boots and Shoes. Patent Boot and Shoe Combined.

The long and successful business of Mr. Kelly has taught him the advantages of displaying to the public at these Fairs of the Mechanics' Institute the products of his inventive mind, when properly prepared by hands of skilled workmen, and therefore never misses the opportunity. His Combination Boot and Shoe, on which he has several patents, is becoming very popular, and when once used is not likely to be discarded. In appearance it resembles a genteel and perfect-fitting boot, but without the long and unnecessary boot-leg that usually serves no purpose whatever, and is a source of discomfort. Its value may be determined by the fact that he has been obliged to resort to several suits at law to protect his interests and prevent infringement of the patent.

KENDALL, D. B.—Hose Coupling.

This is an entire departure from the ordinary methods of coupling hose, and is readily attached, cheap, durable, and does not leak. It consists of a tube, which is inserted in the end of the hose, and of a larger one to which is attached a ring which slips over the hose. This latter is made with an open mouth, so that the hose (or faucet or whatever else) to which it is to be attached can be readily inserted, when so inserted the ring is slid down and thus the two parts are securely fastened together. To detach it, simply slide the ring back and it is done; thus it will be seen that the device is of the simplest kind.

KING, MORSE & Co.—Hermetically-Sealed Goods, Hand-made Cans, with Rosin.

This exhibit was more to show the process of making cans by hand than to display the product of their extensive Cannery. Two different soldering machines were at work near them, thus giving the public an opportunity to judge which was preferable as to excellence of work and comparative expedition. The hand-workman solders the side joint in the old way, but with the iron standing at right angles with the handle. The top is then put on and soldered by placing a piece of solder inside and running an iron, concave and convex, around within it. This, of course, carries the solder around the inside of the can in a liquid state, forcing it into the joint from the inside, rosin being used as a flux. When filled the top is put in and soldered by running the iron around the edge, making a good firm joint, and without bringing the contents of the can in contact with the solder. The display was instructive, showing the public a branch of industry but little known or understood.

KITTLE & Co.—Coats' Celebrated Six-Cord Spool Cotton.

This included all numbers from the Cord like No. 8 to the Gossamer No. 150, and in all colors, white, black and every hue of the rainbow. The latter commanded especial attention, demonstrating the vast progress which has of late years been made in the finish and dyeing of these goods. The display was most creditable to both the manufacturers and agents, and was surrounded each evening by a crowd of admiring visitors.

KITZMULLER, M.—Top Barouches, Open Barouches, Grocery Wagon, Phaetons, Side-bar Buggies, Piano Top-Buggy, Extension Buggy.

Twelve beautiful specimens of carriage work comprised this exhibit, showing the capabilities of this factory to produce vehicles for all purposes, but uniform in good workmanship, fine finish and the most improved running gear.

KOHLER & CHASE.—Musical Instruments.

Contained in a large and expensive show case made for the occasion, and comprising a fine display of band instruments from noted makers, including the celebrated Missenharter, Courtois, Higham, and the favorite K. & C. Also, an elegant assortment of small instruments, such as Violins, Accordeons Concertinas, Guitars, Banjos, Drums, Flutes, and musical merchandise Surmounting the case was an immense double B♭ Helicon, the largest ever imported into the United States. This firm is one of the oldest and largest music-dealers on this Coast, and have a large store in this city and also one in Oakland. They are the special agents of the well-known Decker, Emerson, McCammon, and Fischer Pianos, and the Mason & Hamlin Organ, besides keeping the best instruments of every noted manufacturer in America or Europe. They are also large importers and publishers of music in sheet and book form and keep a full supply of everything in the musical line.

KRUEGER, J. H.—Walking Canes.

Canes from the heaviest hickory to the lightest bamboo, and of a great variety of woods, styles, and finish, were tastefully arranged for inspection. Some of our California woods when turned and polished make very beautiful sticks, and are highly prized by visitors from the Eastern States and tourists from abroad. Orange is also largely used, but without any finish except varnish, its natural color, weight, and markings making it a favorite with many.

LAEREMANS, Frank.—Sofa Bed, Chair and Crib Combined; Operating Table, Speculum Chair and Sofa Combined; Extension Table and Sofa Combined.

Mr. Laeremans is the inventor, patentee and manufacturer of the above articles which are now becoming so well known. The Sofa Bed combines in itself an elegant Sofa, suitable for the most richly-furnished drawing room, and can be transformed in an instant, by its simple mechanism, into a well-appointed Bed, with a Spring Mattress containing forty-eight springs, pillows and every requisite complete, needing only the bed-clothes to make it all that is desired. For the reception of the bed-clothes, when not used, there is a commodious drawer, entirely concealed from view.

Another article embraces in one piece of furniture a handsome Sofa, an A No. 1 substantial Operating Table, and a comfortable and very complete

Speculum Chair. The Sofa may be instantly formed into either of these indispensable adjuncts to a Physician's Office Furniture, by the aid of the very simple mechanism which distinguishes this notable invention from all others.

His Sofa and Extension Table is a great success as a combined piece of furniture, and supplies a want long felt. By tipping the back of the sofa in horizontal position, it is immediately transformed into a dining table six feet long, which can again be increased to eight, ten or twelve feet by sliding the ends out and placing therein the leaves that are kept in a convenient receptacle underneath and out of sight. It is particularly desirable for ship and steamboat saloons.

The Easy Chair and Crib combined is constructed on the same plan as the Sofa-bed. It combines, in one piece of furniture, an elegant Easy Chair, suitable for either a lady or gentleman, which can be instantly transformed into as beautiful a little Crib as the most fastidious mother can desire, and the bed clothing only is necessary to make it complete. It is never in the way, can be as easily moved about the room as an ordinary chair. To those occupying limited apartments, or who are living in furnished lodgings, it will especially commend itself.

LAKE, Henry.—Patent Shoe Blacking.

In spite of the strongest opposition and competition with Eastern manufacturers, by hard work and perservance, Mr. Lake has kept his Blacking in the market until its good qualities for Polish and Preserving Leather have been recognized, and it is now considered a standard article in the trade. His factory on Third street is supplied with a ten-horse power engine and has a capacity of 5,000 boxes per day.

LANGE, John C. R.—Willow, Rattan, and Esparto Ware.

This exhibit consisted of a fine parlor set, flower tables, infants' high-chairs, walking-stools, cradle, lunch baskets, and many other articles in his line of business; it was one of the finest specimens of local handiwork in the Pavilion. It is one that is all-necessary in every-day life, while the æsthetic and luxuriant part of it is no less conspicuous. Esparto is a kind of sea grass, very tough and pliable, and only found in one place in the known world, on the shores of the island of Uniro, off the Spanish coast. The scarcity of this article makes it very expensive, and it can only be used upon the finer kinds of ware, which command a good price. The willow used, split and otherwise, is the osier of Germany; and is all imported, though it might be easily grown in this State. The rattan comes from the Indies. Mr. Lange's factory has been in operation about three years, and he has in his employ skillful weavers, as the beautiful center table of willow and esparto, with its enclosed fountain of gold-fish, the rocking chairs, and other articles of *vertu* and use, sufficiently evidences.

LANCASTER, J. & Co.—Cloth, and Custom-made Clothing.

The quality, style and workmanship of these garments were favorably commented upon by visitors, and no doubt the exhibitor has derived substantial benefit from this way of advertising.

LANTHEAUM, John.—Waffle-Machines.

These were in almost constant operation, supplying the demands that came from old and young, who could not resist the temptation of a nicely-browned and sugared waffle.

LARKIN & Co.—Carriages and Buggies.

The Hacks exhibited by this firm were especially noticeable, showing in every way the most finished workmanship. The harmony in colors and elegance of the upholstery in all the vehicles were warmly praised. The Buggies, single and double, were of a variety of styles, but equally well made, and all fully guaranteed.

LATSON, Frank P. & Co.—Hardware, Samples of Burglar-proof Locks, and Bronze Goods.

Of Eastern manufacture, and probably the finest display of these articles ever made at a Fair in this State.

LEA, H. C.—American Coffee Pots.

A new invention, and claimed to effect a large saving of coffee and an increase of the aroma and quality.

LEARY, Dan.—Coasting Sleigh.

Made in the form of an ordinary boy's sled, but on the inside of the runners are four small wheels that can be easily adjusted to roll on the ground when required, which is all the time, in this city, except a few frosty mornings.

LICK OBSERVATORY.—Miniature Dome.

This is a model of a dome for a great telescope, and will probably be adopted by the Lick Trust, for the one now in process of construction for Mount Hamilton. By a novel arrangement of rollers, a dome of any size and weight can be easily and steadily moved. Another improvement is the method of sliding the movable shutter that closes the opening in front of the objective when the instrument is not in use. The contract for furnishing the lens of this telescope which will be the largest in the world (three feet) has been awarded to Alvin Clark & Sons, Cambridgeport, Mass., and there is a reasonable prospect that, within a few years, the citizens of our State, will, as far as vision goes, be nearer the celestial orbs than those of any other in the Union.

LIDDLE & KAEDING.—Guns, Pistols, Fishing Tackle and Sporting Goods.

At every Fair this enterprising firm make a display of their goods, keeping pace with all the improvements and inventions of the age. Their exhibit comprised samples of the best and most perfect fire-arms yet manufactured, from the heaviest rifle to the smallest pistol, including every necessary appliance of the sportsman, whether hunting on mountain or marsh.

LINCOLN, O. J.—Self-adjusting Hammock Chair.

When we reflect upon the many ingenious mechanical appliances for rendering comfortable the sick and crippled—for breaking the monotony of weeks of confinement to the sick bed, we can but wonder how our forefathers lived at all; why they didn't all die for the lack of the easy chairs, reclining couches, spring beds, self-adjustable cots, and other appliances for comfort, of which this chair is one of the most simple and comfortable. It adjusts itself to any required position, from sitting to reclining, or *vice versa*, without effort; is strong and light, weighs only twelve pounds, and only four inches in thickness when folded.

LINFORTH, RICE & Co.—Zimmerman's Fruit Dryers, Nos. 1, 2, and 3; Giant Riding Saws; Blymer's Church Bells, 28, 36 and 48 inch; School Bells, 18 and 20 inch; Mystic Carpet Sweeper; Twin Dasher Churn, 10 ft.; Enterprise Windmill; No. 6 Rudel's Enterprise Coffee and Spice Mill; Combined Wringer and Wash Bench; Enterprise Combined Sausage Stuffer; Fruit, Jelly and Lard Press, No. 25.

The fruit dryers exhibited, are now well know in this State, and in general use among fruit raisers and farmers. Made of galvanized iron, they are light, portable, and, with good use, almost everlasting, and so cheap as to be within the means of all. The Blymer bells have a peculiar soft, sweet tone, yet withal great volume of sound, and, wherever introduced receive the highest praise. The Enterprise Wind Mill, Horton & Kennedy's Patent, is celebrated for its power in light wind, its wearing capacity and ability to withstand the hardest gales without injury. The Churn exhibited by them is called the "Dairy Queen," and the invention of Mr. Geo. W. Freeman, Sierra County, and possesses many points of novelty and improvement which are worthy of especial mention, It is operated by a gear, the beater-shaft revolving thrice to every revolution of the balance wheel, which secures ease, rapidity and uniformity of motion. The peculiar cam-shape of the beaters, when revolved, with the inside of the cam forward, is to draw the cream from the sides toward the center of the churn. One-half of the beaters are beveled on the right side, the other half on the left side, commencing at the ends of the shaft and meeting in the middle, by this arrangement tending to draw the cream from the ends of the churn to the middle, where it will be most effectually acted upon. Another important point of construction is the jacket which surrounds the churn, which is to be filled with either hot or cold water, according as the cream needs warming or cooling to bring it to the 58° or 60°, which are best degrees for churning. This jacket or cooling chamber holds the cream against the rise of temperature, which always occurs during the churning and is, of course, much better in its action than a temporary cooling or warming before churning begins. Cooling chambers are used on churns of other styles, but Mr. Freeman believes his is the first geared churn with a cooling chamber.

MACKAY, Alex.—Brussels Carpet, Rag Carpet, Packages Carpet Warp, Pieces Border, Rugs, Carpet Loom in Operation, and Cocoa Mats.

The most interesting part of this exhibit, was the weaving of rag carpet, which brought to the heart of many a visitor tender memories of the old homestead, loving hearts and faithful affection of those who made and wove, with so much care and pride, this same kind of carpet in the days of childhood.

MAIN & WINCHESTER.—Harness and Saddlery.

Of all exhibits in the Fair none were more complete and comprehensive of a line of business than this, nor more deserving of the praise accorded to articles of real worth and merit. All the paraphernalia appertaining to the horse was tastefully and artistically arranged on and covering the four sides of a room 20 x 40. At no Exhibition held in the United States has there been a larger or finer display of harness and saddlery goods than this, including Robes, Mats and Whips. Of the latter there were over one hundred and fifty different samples. The manufactures of this firm are now sent to all parts of this coast, including Mexico, and even to South America and Australia.

MALLON, John & Son.—Ornamental Glass.

Most of the large public and private buildings on this coast contain more or less of the products of Mallon's glass, cut, bent, stained, ground or embossed. Many of the specimens shown in the Fair were real works of art, beautiful figures and designs being wrought on the imperishable glass by the skilled artisans in his employ, with a fidelity to nature and artistic finish almost equal to the painter's brush. Stained glass windows for architectural work particularly in churches, is made a specialty at this establishment, and will compare favorably with those of the best European makers. Memorial windows are made of any desired size or design, and when placed in a suitable position, is a beautiful and appropriate way of perpetuating the name and remembrance of the loved and departed.

MANLOCK, Miss Jennie.—Tatting Quilts and Pillow Shams.

Very unique in appearance and design, and called Nebuchadnezzar's Dream.

MARSH, G. R. & Co.—Fine Japanese Goods.

Fine, indeed, was this collection, particularly in bronze and porcelain ware, many of which were of great value and would be highly prized in any museum or collection in the world. Although small as regards numbers, the several specimens embrace the highest style of Japanese manufactures, which are supplemented by rare and antique objects of art. A few of the principal articles were: an antique Satsuma vase, small but very rare; Chinese liver-colored vase, of which few are to be found; Blue China vase, by the famous artist, "Phoshi," of Mino; superb Cloisonne vases, antique and modern, the latter undoubtedly the finest yet produced; magnificent figure bronzes, cut by the finest workers in Japan; antique Nashijo; Shibiyama, and other superb lacquers. Connoisseurs and lovers of fine art and skilled work, as exemplified by the Japanese, would be gratified by a visit to their store under the Palace Hotel.

MARTIN, Mrs. Sarah.—Ironing Board.

Easily fastened or attached from any firm perpendicular support, like a wall, and would be a great convenience in any household.

MARWEDEL, C. F.—Machines, Moulders' and Special Tools.

Mr. Marwedel's assortment of tools is very extensive, comprising almost everything needed by workers, in wood or metal. He publishes a fine and illustrated Catalogue and price list of the articles he keeps, which is a great help and convenience to buyers at a distance, as also an aid to determine in many cases what to purchase.

MARWEDEL, E. H.—Brass Bedsteads, Cornice Poles, and Window Shades.

Brass bedsteads are not often seen, but cornice poles of that metal are used in our finest mansions for holding window drapery, and, when highly polished, presents a beautful appearance, particularly when in contrast with crimson or blue. His extensive assortment of various articles made from metal, was an attractive feature in the gallery.

MATTHEWS, H. E.—Audiphones.

"The blind shall see and the deaf hear," is partly fulfilled in these days by the use of this valuable invention. The principle involved in its construction is the conductivity of sound through the bones of the head to the auditory nerve and thence to the brain. The audiphone is in shape somewhat like a feather fan, and made from vulcanized rubber, celluloid or other similar substance. When bent and held in such position by suitable cords, and the edge applied to the teeth, the waves of sound impinging on the instrument are conveyed to the brain, as before stated.

MAY, Mrs. N. E.—Moss House.

This was a model, only, but, no doubt, the original design of the "Moss Covered Cottage" mentioned by several poets.

MATTHEWSON, S. R.—Device for Carrying Cable Cars around Curves.

The principal involved in this device is somewhat different from the others exhibited, inasmuch as the grip need not let go the cable, it being held against vertical rollers on going around the curve, alternated by rolling against segmental pieces between the rollers, small rollers being inserted in the grip for that purpose.

MAYO, Mrs. H.—Frame of Wax Flowers and Wax Harp.

The tastes of women as regards the use of wax for ornamental articles seems to have changed very materially within a few years, for then exhibits of wax were numerous, while now but few are seen, and they, as in this case, a fair representation of the article intended. Eve, the Greek Slave, Cupid, and other personations of the "human form divine," in various stages of wax composition, as wont to be shown, are now rarely exhibited.

McDONALD, E. M. & Co.—S. R. Matthewson's Patent Circular Rotating Cam and Straight's Stamp Quartz Mill.

Matthewson's Patent Circular Rotating Cam and Straight-Stamp Quartz Mill is a device patented not long since. The whole frame and all is of iron, and the machine is in very compact form. It can be transported readily, the heaviest piece weighing 600 pounds. The small size (or No. 1 mill) contains six stamps, weighing 150 pounds each, making 600 drops a minute. The next size (No. 2) has ten stamps, weighing 200 pounds each, making 1,200 drops a minute. The little mill on exhibition was carefully examined by a great many mining men, and favorable opinions expressed.

MELSING, Miss May.—Chenille Work.

This work was carefully and elaborately done, each stitch and figure being accurately spaced and the colors beautifully blended.

MERSEREAU, A. S.—Express Wagon, Milk Wagon, Patent Top-Buggy.

A peculiarity of this buggy was the springs, which were of second growth ash, supplemented by two steel bands, fore and aft. It is claimed to be the easiest riding buggy yet invented.

MESENBURG & WESCHER.—Patent Refrigerator for Cooling Purposes.

The object of this invention is to provide a device which is adapted to the cooling and refrigeration of beer and other liquids and fluids contained in barrels or casks, and consists of a rectangular grated receptacle for the refrigerant, with depending sides hollowed to fit the barrel and extending below the center. These sides are water tight and holds the water that drips from the ice upon the grate above. At the lowest point it has a spigot to draw the water. The object of the invention is to obviate the necessity of placing beer barrels in the refrigerator to keep them cool.

MILLER, Mrs. Clara.--Ostrich Feather Quilt.

The feathers in this case were in name only, and a careful scrutiny of the design failed to discover any resemblance between it and the maligned bird.

MILNE & GANTS.—Patent Sanitary Water-Closet.

This California invention was put to a very severe trial during the Exhibition, being tested in every way by interested parties to ascertain, if possible, its weak points or defective construction. At the close of the Exhibition its condition was found to be as perfect as at the commencement.

The inventor claims that it has no fouling chamber, or open overflow; no trap or other impediment to the rapid discharge of the contents of the bowl. The plunger is solid and cuts off all connection with the sewer, as effectually as a stop-cock. The overflow is a syphon and connects with the floa case, which is hermetically sealed and separate from the trunk of the closet. The closet requires no special arrangement of supply or waste pipes and can subsequently replace any other closet at a small expense. The valve is automatic and maintains a given quantity of water in the bowl. It is the only water-closet of this class which has no fouling chamber; and has the only perfect overflow and simply constructed supply valve. It is compact, simple, reliable, durable, and a positive seal against sewer gas.

MITCHELL, Geo. H.—Magic Lotion.

MONTAGUE, W. W. & Co.—Mantels, Tiles, etc.

This was, without question, the largest and finest display of Mantels, Fire-places, Tiles, etc., ever before seen on this coast, covering in the aggregate 115 feet in length of wall space, and 1,341 square feet of floor. It is but four or five years since this ware was first introduced, and now it has become of general use. The ease with which any desired pattern can be provided, either in imitation of marble, stone, or brick, or a fanciful ideal figure, and its exemption from disfigurements which attend the use of marble or wood, make it much more desirable. Large numbers of these mantels are shipped into the country, being much lighter than marble, less liable to damage, and just as ornamental. The arranging of the goods was done in the most artistic manner, and the exhibit would do credit and honor to any Exposition. To give a detailed description of the articles here would be impossible; but the following were particularly noteworthy: Wood mantels, with open fire-places, and English tile facings with polished brass moulding, set with Normandy and old English brass. Fire-dogs and nickel-plated coal-burning baskets, fire-places lined with artistic iron tile casings, and each laid with encaustic tile hearths; mantels composed entirely of English art-painted tile with polished brass beadings with Eastlake fire-places, and brass and tile fenders; tile mantel and open fire-place, representing twenty-four subjects from Shakespeare, done in sepia monochrome with polished brass fretwork, fender, and fire-irons; marbelized iron mantels with Bissell's improved patent shaking grates, with nickel-plated Harvard bars, and embossed mirror summer fronts; handsome and complete pattern of majolica tile wainscoting in colors, with tile moulding and encaustic base; piece of ceramic, representing a mosaic vestibule, 9x11 feet. This vestibule floor was composed of 52,000 pieces of tile in nine colors, and weighed two tons. It is the largest and heaviest piece of ceramic work ever brought to California; 168 different patterns of encaustic inlaid and glazed tile hearths, samples of hand-painted hearths, two subjects; nine sets of art-painted cheeks on tile, hand-painted and glazed; hand-painted tile panel, 15 x 25 inches, painted in England; 260 patterns of tile for grate facing, corings, dado, wainscoting and wall-decorations; polished brass coal hods, fire-sets, cuspadores, coal-grates, tenders, fire-guards, and andirons; Lustro, a superior polish for cleaning brass, nickel, and silver; tile stoves with polished iron fronts and nickel-plated rails; samples of English Cameo tile in black and white relief. They also exhibited samples of the American barbed fence wire, for which they are agents for this coast. It is constructed of a single heavy wire encased with a thin sheet of iron spirally wound around it, and having its edge raised in points every inch or two.

MOORE, Mrs. H. A.—Hair Producer.

MORROW, Mrs. & Co.—Skirt-supporting Corsets.

Constructed on purely scientific principles, the adjustment easily made, and weight of clothing so distributed as to be imperceptible to the wearer.

MORROW, Jno. B.—Ærial Steamer.

"Let me fly unto the ends of the earth," is the wish of many; but with Mr. Morrow it is not only a wish, but his firm intention so to do, as soon as a few trifling changes are made in the plan, and a large machine constructed similar to the one he exhibited in the Pavilion on two or three occasions to the expectant public.

For a number of years Mr. Morrow has made aeronautics a study, and constructed a number of machines for navigating the air, on plans that he feels confident will prove a success. Being a very competent mechanic, he can embody his ideas in a practical manner, and therefore is enabled to test matters as he progresses by actual experiment. The offer of $1,000 by the Managers for the first flight of a machine across the Pavilion, carrying a man, and a large sum for each successful trip thereafter, was the opportunity looked for, and the inventor bent all his energies to the task of preparing a machine. To that end a room in the Pavilion was placed at his disposal, and such materials as required furnished. In a short time a machine was made, the lifting and propelling power being obtained from a small steam-engine within the body, and applied to four propellers, revolving on an inclined plane in opposite directions.

After one or two trials the idea of carrying a man was abandoned, to the great disappointment of the Superintendent, who, being much interested in its success, had obtained permission to be the first to cleave the air whithersoever he desired. It was then decided to construct it of size and strength sufficient to simply fly and carry its own weight. This in turn was changed to supporting its weight on a wire stretched across the Pavilion, from side to side, the entire power of the engine being expended in propelling the aerial nav gator forward, which it did for a short distance; but owing to a lack of steam-generating apparatus and a complication of internal disorder, the public, who waited patiently before its appearance, and expectantly thereafter for it to fly, were doomed to disappointment. As a final disaster, it took fire and was partly consumed. The inventor has yet faith in his ability to succeed; and if faith will move a mountain, why should he despair?

NEUMANN, Joseph.—Display of Cocoons, Raw Silk, Manufactured Silk and Thread, Silk Flags, Silk-reeling Machine—all California Manufacture.

Mr. Neumann's exhibit was an unusually large one, occupying one elevated glass stand and a glass case. Both in variety and quantity of cocoons and raw silk, the display was remarkably good, and reflects great credit upon the exhibitor for the care, perseverance and expense he has gone to in endeavoring to build up this industry in California. Several pyramids representing the silkworms spinning their cocoons were shown, besides over twenty cases of cocoons, all raised in this State. These latter represent many different varieties, from the smallest up to the full size of the French annual. The specimens of raw silk exhibited were very fine, and establish, as clearly as it is possible to do, in that the silk manufactured from the worm bred in this State is, in its raw condition, equal to that of any country in the world. Mr. Neumann, through his own unaided individual efforts, has done much to establish this industry and is deserving of every praise for it. Interspersed among his exhibits are the different medals (nine in all) that have been awarded him for exhibits in other places and countries, the whole constituting a well-arranged display of silkworm productions and the marks of appreciation extended toward them by others.

NEUMANN, Gustave.—Preserved Fruits.

His exhibit consisted of some ten dozen Gem jars, filled with pears, plums, peaches, cherries, crab apples and other fruits, which looked as fresh and perfect in form as when taken from the tree, and indicated excellent handling in the canning process.

NICHOLS, H. C.—Pruning Shears.

OLDHAM, Nettie.—Hair Wreath.

This specimen of hair work was deservedly praised by all who examined it, as requiring the highest order of taste and skill to accomplish it.

OHMEN, W. H.—Steam Engines.

Mr. Ohmen had nine engines on exhibition, all of his own manufacture One 8x8 horizontal, was used to run the Wilbraham Pumps of J. Hendy, another the same size, but upright, was used to run two Brush generators that furnished light for the ten electric burners in the Pavilion and which was a most excellent test of the qualities of the Engine, as the least variation or unsteadiness of speed would become at once apparent. The engine proved itself to be first-class and perfect in every part, and his whole exhibit was warmly commended by engineers and practical mechanics. The size of engines exhibited range from 4 x 6 to 12 x 20, and power from one to fifty-horse. A very convenient portable and cheap engine for general purposes is his 4x6 with boiler combined, and rated at one horse power. The Ohmen engines may be found running either mills, pumps, breweries, printing-presses, ice machines, wine-presses, tanneries, or other manufactories, in nearly every town in the State, and from every side come letters testifying to their durability, simplicity, and economy.

O'BRIEN, P. J. & Son.—Open Buggies.

This display of these well-known manufacturers attracted much attention from carriage-men and others.

They exhibited side-bar buggies which are very firm and staunch in construction, and present new features of excellence. The reaches are in the form of a V, about an inch square, and very firmly ironed at the rear end, the apex being united by a steel receiver, which, with their steel fifth wheel, socket and safety hook, makes a safe, durable and trusty connecting gearing for buggies. They are also side-spring buggies, with steel equalizing rods, having arched wooden side-bars, which are really the reaches, and by their arched form equalize the spring of the gearing and jar of the cobble stones or other roughness of road. They manufacture any desired style of buggy or wagon, and also exhibit an excellent set of wheels, only varnished, to show the perfection of joint, and excellence of wood used.

OLSEN, John.—Model Ship.

About three feet in length and showing every sail, rope, and appliance of a full-rigged clipper ship.

OSBORN & ALEXANDER.—Barnes' Foot-Power Machinery, Foot Lathes and Bicycles.

Those who have observed the running of the neat little foot-power scroll and bracket saws exhibited by this firm cannot but admire the ease and rapidity with which articles of vertu are cut from the plain block of wood. Neither can they help but acknowledge that much of the superabundant energy and restless ambition of a boy can be profitably employed on one of these little machines. The average boy will take to them as kindly as a duck does to water, and oftentimes a latent talent for carving and cabinet work is developed by such exercise of the mechanical powers. We know of no better present to make to an energetic lad than one of them. They are the agents here for Barnes' machinery, of various kinds, also for the Columbia Bicycle.

OSBORNE, D. M. & Co.—Combined Header and Self-Binding Harvester; Combined Reaper and Mower; Single Mower; Header Attachment for Self-Binding Harvester.

The headquarters and factory of this immense establishment is at Auburn, New York, with branch offices in all the principal cities of the world. The Oborne combined wire and twine self-binding harvester attracted the greatest attention from visitors, being in practical operation each day, under the supervision of Mr. Carrington, their local agent, who, in the politest manner explained its mechanism and advantages. Wire has until recently been the material used for binding grain by machinery, but the new improved permits the use of twine, which is cheaper and does away with the objection that many have to wire, on account of the difficulty in separating small pieces from the grain.

This binder is strong, durable, light running, convenient to handle in or out of the field, easily adjusted in all its parts, giving entire satisfaction wherever used. It is furnished with both wire and twine-binding attachments, so as to enable a farmer to be independent of corners on either, and works equally well on both. The binding attachment can be taken off by loosening one bolt, enabling it to go through an ordinary farm gate. It cuts from two inches to two feet high at the the turn of a wrist. It is automatic in its binding, tying a bundle every eight or ten feet as set, or by a touch of the foot the binding may be delayed in thin grain until the proper size bundle is formed. It compresses the bundle by the independent action of drawing the band, more nearly resembling hand-binding therein. The needle is at all times in sight of the driver, who can thread or otherwise attend it without dismounting from his seat. It is very simple, three cog wheels and two track switches working the tying machinery. The binder attachment is slipped along on a grooved frame to accommodate different lengths of grain. All in all, it is a most satisfactory piece of mechanism, and makes the farmer possessing one independent of hired men or header owners. He can with a six-foot harvester, cut and bind an acre an hour, using three good horses, increasing the amount by using more teams or a larger machine. The grain can be handled and stacked at his leisure.

The other harvesting machinery exhibited by this firm are the No. 2, Independent Mower, which presents many valuable improvements. The Pitman rod works almost horizontally, thus avoiding the "pounding" of a high gear rod. It cannot be twisted or strained, as both ends of it work with a ball joint. The double tree works on a slide on the pole connecting with the working parts of a draft rod which raises the cutter bar, when the lever is touched, by horse power, thus enabling the driver to throw it quickly over an obstacle without violent muscular exertion. The guards of all their machines are made of such malleable iron that they may be thrice bent and straightened without cracking. The ledger plates, which do as much cutting as the knives, are of the best steel, and can be taken out and ground by simply removing the guard.

They also exhtbit the No. 3 Independent Reaper, the No. 5 Independent Rearcut Mower, and the No. 6 Combined Reaper and Mower. All these machines are first-class in build, light draft, with positively no side draft, and comparatively noiseless, as might be ascertained by listening to a No. 2 Mower in action in the Pavilion. By the way of a convincing experiment of the strength of the machine, excellent material of guards, and desirability of a horizontal pitman for standing heavy shocks, Mr. Carrington run a broom through the machine, handle, wire and all, cutting it in pieces of an inch long from end to end.

It is also claimed that it costs less to harvest grain by binding than by heading, as it is well known to all accustomed to the use of headers that grain cannot be cut until absolutely ripe and dry; hence in cutting, the wastage through shelling is great; variously estimated at from 2 to 5 bushels per acre. While with a binder harvesting can commence weeks before the grain is ripe, when it will not shell out nor waste any whatever.

The popular feeling now seems to be in favor of the binder as against the header, for the reason that milers, bakers and farmers would all rather return to the old style of cutting wheat when green enough to bind, for the simple reason that one obtains more wheat to the acre and gets his field clear sooner; another can make more and better flour to the hundred pounds of wheat; the other can make better bread.

In answer to the query of the San Francisco Produce Exchange, as to the causes of the relative depreciation of our wheat in Liverpool market, the Englishmen replied: "It is mainly that you leave your wheat standing in the field until over-ripe, thereby thickening the bran at the expense of the flouring qualities of the kernel." This has been conceded by everybody who has investigated the question, and established by experiments made by scientists A given piece of wheat will yield more pounds to the acre just before it is dead ripe, and make more and better flour to the hundred pounds, than it will if left in the field ten days longer.

PACIFIC COAST S. S. Co.—Model of Steamer *State of California.*

PACIFIC SPRING & MATTRESS Co.—Crandall's Patent Spring Mattresses, Bartlett's Slat Spring Bed, Furniture, Mattress, Parlor Sets and Lounges.

Rest for the weary would be a proper name for their upholstered furniture and mattresses of new and improved patterns. Some of the latter are made in sections, either of three or two pieces to a mattress, as one may elect. The edges are made square, so as to fit up close without having any depression at the joint. By this arrangement the two or three pieces can be turned and reversed in several ways so as to bring all parts of the bed under equal wear, and presenting new surfaces to the pressure of the body. Their furniture comprises bedsteads in French walnut and mahogany, stuffed chairs and lounges finished in raw silk, satin and "jute," which, with their many styles of mattresses and Crandall's spring bed, made up a fine exhibit.

PALMER, C. C.—The Palmer Safety Clutch for Elevators.

The Palmer safety clutch for elevators—the latest device for preventing accidents on elevators—has attracted a great deal of attention at the Fair, where the inventor had an elevator in operation with the new clutch attached. The clutch is placed under the platform of the elevator on timbers especially arranged for it. In fact, the clutches proper are attached to a skeleton platform under the main one, but independent of it. This is balanced by a weight, the rope of which goes over the same pulley as that which raises and lowers the elevator. Therefore, the platform carrying the clutch will rise and fall with the elevator, and yet be independent of it. If now the rope carrying the elevator should break and the elevator drop, it will only drop an inch or two, and will then strike the dogs of the clutch, these holding the lower platform and preventing further descent. The action is instantaneous and positive, no spring weights or anything being required. The cage is caught before any momentum is given it. The platform underneath supports all the weight, instead of suspending it. The greater the weight on the elevator, the quicker the catch and lighter the fall. The dogs jam towards each other, one pair on each side, and do not, therefore, tend to spread the guides, as most clutches do. The cage is caught instantly.

PARKE & LACY.—Hook and Ladder Truck.

PARKER, J. M.--Japanese and India Goods.

Mr. Parker had a large and fine display of high cost and rare goods from the Orient, of which for many years he has been a large importer and dealer. The information to be gained by a close inspection of their samples of the loom, furnace and workshops of a people whose manner of production and specimens of work have undergone but little change for a thousand years is not much, but the conviction is forced upon us, that with all our boasted civilization and knowledge in art and science, and with the aid of elaborate machinery, in many things we cannot yet equal the handiwork of those ancient races. This exhibit was centrally located and the attendants polite and obliging. The articles were but few of the many kept for sale at his large establishment on Kearny street.

PEAKE, Chas. & Co.—Turkish Rugs.

Mr. Peake is the Pioneer of this now popular industry, and keeps all varieties of patterns and cloth stamped ready for use. He also teaches the art of making them in all the various styles.

PFERDNER & Co.—Clark's Noiseless Wheels; Stanyan's Bread Kneader and Mixer; Bradley's Boxes and Pails for Packing.

This exhibit of useful articles was in charge of Mr. Pferdner himself, who took delight in explaining the merits of each article. The noiseless wheels were for store trucks and like articles, and are rapidly taking the place of the rattling noisy ones now in general use, which are a great nuisance, as every merchant and warehouseman in the country can attest. They are easier run, and less liable to breakage than ordinary wheels, and are made of any size, from two and a half inches up, with rubber tire adapted to the work to be done. The boxes were imported and made of wood cut thin. The principal novelty in them was a peculiar-shaped piece of tin that formed the angle of the cover, and the sides being sewed together instead of tacked or nailed as formerly. They are of all sizes; and being of white wood and odorless are suitable for butter, lard or any article of food. Their cheapness will probably command for them a large sale, particularly for the transportation of berries. The bread mixer is a heavy, deep bread pan, set in a frame that clamps on the kitchen table by means of a thumb screw. Inside of the pan is a short, obtuse-angled trowel, arranged to turn by means of a crank. Turning this trowel, kneads the flour and moves the pan around on its axis as it does so. It will undoubtedly save much hard work for the housewife, and is claimed to make better bread than by hand.

PHILLIPS, Capt. W. A.—Apparatus for Turning Curves in Cable Roads with Street Cars.

In this device the main cable is carried around the curve on small sheaves The cable is not used by the grip on the dummy for the purpose of propelling the car on the curve. On the shaft that carries the third or center sheave is fitted a live sheave of one-half the diameter of those that carry the main cable. The loose sheave is worked by the means of a clutch which is operated by a small lever at each end of the curve. On this loose sheave there is an endless chain with projecting teeth. The chain is carried around on the line of the curve by a series of small guide sheaves.

The car having reached the curve, it lets go of the main cable. The grip shank pushes the clutch lever which starts the chain in motion and a tooth on the chain immediately takes hold of the grip shank and pushes the car around the curve. When the grip shank again touches the opposite lever it throws the clutch out and stops the machine until the arrival of the next car, when it again goes through the same operation. In this model the car travels on the curve at half the speed of the straight line, but by changiug the loose or driving sheave any desired speed may be obtained. The car can be stopped or started at any point on the curve by slightly raising or lowering the grip shank.

PIDGE, D. M.—Novel Fans.

These Fans were made in the shape of a pansy and very popular. Manufactured by the exhibitor.

PIKE, Miss Ella.—Lace Pillow Sham.

This was worked or made of fine linen thread and very elaborate in design. Its companion will probably be ready for the next Fair.

POHEIM, Jos.—Display of Tailoring and Clothing.

This was an exhibit of a fine line of imported and domestic fabrics of the latest styles and of the finest quality, with sample garments for gentlemen made at his establishments on Montgomery, Market and Third streets.

POWELL, J. J.—Publication, Wonders of Sierra Nevada and Coast Range.

This book was compiled and published by the exhibitor.

PURCELL, G. M.—California Washing Machine.

An experimental test made on shirts, lace curtains and delicate fabrics proved that it would wash four shirts to one by hand, and delicate buttons sewed on the fabric in this public test, remained unbroken. It has worked 100 shirts in 80 minutes, and is the perfection of washing machines. It is claimed clothes washed on it will last one-quarter longer than if washed on a board, and that it takes one-quarter less soap. It washes from the smallest lace collar to the largest pair of blankets.

RAY, W. S. & Co.—Elmwood, Hudson and "Our Choice" Ranges, and Stamped Ware; Ship, Steamboat and Yacht Stoves, Adjustable Grates and all kinds Ship Furniture, Fog Horns, Gongs, Sounders, Fire Clay, Fire Brick, Tiling, Hollow Ware, Crude Plumbago, Stove Polish, Lubrication, Patent Egg Carrier.

This display deserves special mention on account of the variety and excellence of the stoves, ranges, etc., most of the articles being of home manufacture, and made at their establishment on Market street. The casting in the stoves and ranges are smooth, and compare well with the best imported. So well are they appreciated here that they have to work night and day to supply the demand. They have also on exhibition a new and novel invention consisting of a glass oven door, in iron frame, so that one can see what is transpiring in the oven as well with the door shut as open. Also a patent "Phœnix" grate that can be raised or lowered at will while the fire is burning and thereby giving the housewife complete control of the heat of fuel at all times. This is a much-needed invention in this climate where fuel is high and a fire in the kitchen required only for cooking.

REDSTONE, A. E. and F. E. Hill.—Sweepstake Quartz Mill and Challenge Amalgamator.

This was a prominent exhibit and attracted much attention from mining men and others. It is the invention of Mr. Redstone and manufactured at the Benicia Agricultural Works The quartz mill carries the stamp in a revolving frame or face-plate, flanged friction wheels furnishing guides to the stems. The bosses, shoes and dies are adjusted the same as in the ordinary battery, the dies being in three segments of a circle around an inside cone, in which the perpendicular shaft rests. To this shaft is attached the revolving face-plate and bevel wheel, on which the pinion meshes that is keyed to the pulley shaft.

The cams, upon which the rollers or wheels which raise the stamps are attached, are placed on the outside of the rim or curb. Upon the center being revolved, carrring the stamps, they are carried up the horizontal cams by these rollers, each stamp having its own roller, and, gaining the highest point, are dropped. As they drop they strike an angular blow, or rather a glancing one, then grinding on the quartz as they slide around on the die, until they are lifted by the next cam.

The cams are removable, and one, two or three may be used. With one cam only, each stamp, after its drop, is slid around the die the complete circle till it reaches the cam, grinding the quartz the entire distance. If two are used it drags half way, lifts, strikes the blow and drags again. All the stamps not in the act of rising are grinding or performing the work of mullers in a pan.

The mill is portable, and is made all ready to attach to a belt. The heaviest piece is 125 pounds. It can be run by horse power as well as by steam. A miner can pack one on burros, and then make the burros run it, thus utilizing his means of transportation as power.

A No. 1 prospecting mill weighs, complete with foundation, about 1,100 pounds and costs $500; No. 2 weighs 3,000 and costs $1,000. No. 2 can be run by two small animals attached to a sweep.

This mill has plenty of discharge surface, aud does not require very much power to run it. With one cam acting and moving at 144 revolutions it strikes 1,152 times a minute. With three cams, and dropping the eight 125-pound stamps three times a minute, it strikes 3,556 times a minute. It sounds when running like half a dozen ten stamp mills.

REED, Dr. B. F.—Showcase of Fancy Work made by Miss Clotie Reed—College of Notre Dame·

This exhibit of fine handiwork was most creditable, the young lady's skill with the needle being of a very high order.

REED, Robt.– Case of Artificial Limbs.

Mr. Reed's marked ability in the construction of artificial limbs is fully acknowledged by the medical faculty of this coast. The Committee appointed to examine such appliances last year earnestly recommended his work for the highest award, which was granted. This year his display was just as interestting, in addition to which several new improvements recently patented were represented.

REYNOLDS & RIX.—Horse Whim for Mining Purposes, and Brown's Safety Attachment for Mining Cages.

Mr. Brown's safty device consists in the employment of inclined arms having their outer ends formed to engage and hold in the guide timbers between which the cage moves, while their inner ends are connected with a ring secured to a vertically sliding spindle or king-bolt having elliptic spiral, or other springs to draw it down forcibly if the rope breaks, and thus cause the ends of the inclined arms to engage the guide timbers. As soon as these arms become engaged and fixed in the guides, the whole weight of the cage is transferred to the king-bolt, by which it is suspended, and through it a direct power is exerted to fix the arms in the guides independent of the spring. A sliding ring or sleeve upon the king-bolt below the attachment of the inclined arm is connected with them by stays or bracing arms, which cause both of the arms to be thrown out simultaneously, and equally prevents them from being thrown out too far by the shock, and assist in strengthening and bracing them.

The frame of the cage has clips which extend upon each side of the guide-timbers, where the safety-arms will engage them and thus prevent the timbers from being split by the arms when they are forced into the timbers. Rubber buffers or springs below the nut at the top of the king-bolt relieve the jar when it brings up on the catches, and the platform or floor may also be supported upon springs to relieve the force of the blow. From these upper cross-timbers an angular frame extends upward, being bolted or otherwise fixed to the cage frame, and serves to support a protecting roof, which protects the occupants of a cage from falling rubbish or a broken cable.

The Horse Power is so constructed that one horse can easily hoist over one thousand pounds at a depth of five hundred feet. The power is mainly built of wrought iron. The hoisting-drum is thrown out of gear by the lever while the load is held in place with a brake by the man tending the bucket. The frame of the power is bolted to bed-timbers, thus avoiding all frame work. When required these powers are made in sections for the machine.

RICHARDS & HARRISON.—Hub Punch; Schlitz Beer.

This exhibit was enclosed by a neat railing, the articles tastefully arranged, and visitors invited to sample their quality.

RICHMANN, H.—Richmann's Rock Drill and Air Compresser.

This is a Californian invention, recently patented and attracting much attention from miners and mine owners, and has been successfully introduced in many mining districts. The air compressor mechanism is very effective and the drill, with its operating devices, a marvel of ingenuity.

RIESLAND, Peter.—Model of the Man-of-war "Constitution."

ROBINSON & HALLIDIE.—Barb-Wire Machine and the manufacture of Scutt's Patent Barb Fence-Wire Manufacture.

The immense importance to the farmer and land owners of this comparatively new method of fencing, and the large sums invested in its manufacture, gives a more than ordinary interest to the article. The exhibit made by this gentleman of a machine in daily operation was instructive and interstring.

RHODES, Miss Lou.—Table Mats.

The pretty articles were neatly made, and were useful as well as ornamental.

ROEHNERTS, Fred.—Rolling Top Mattresses.

When seen, the commendable qualities of this mattress becomes at once apparent. It is made upon the principle of a roller towel, the roller for the mattress being at the head of the bed. Each day the mattress can be moved a few inches on the roller so as to bring the pressure of the body in a different place, or it can be turned the other side out, reversing the pressure and presenting a fresh surface. In a sick room it will be a great auxiliary, as one can readily bring the patient higher or lower in the bed at will, changing their tiresome position a little without much effort.

ROGERS, Mrs. S.—Patch Quilt, made by Harry M. Rogers, ten years old.

This phenomenal production did not attract an unusual degree of attention from visitors. Yet it should be carefully preserved; for, if the present Master Rodgers should become the future President of the United States, his example would be followed by thousands of our youths, and the making of bed-quilts by boys might become a great industry in the land.

RUNYON, Mrs. Sol.—Display of Home-made Preserves and Jellies.

(See Fruit display page 64.)

RUSSELL, Thomas & Co.—Clark's Mile-End Spool Cotton.

This beautiful display of thread was very attractive to the ladies, and the exhibitors claim it to be the best in the market.

RYE TONIC COMPANY.—Rye Tonic.

This "tonic" was put up in a very attractive form, the design for the labels being a real work of art, representing a sheaf of rye. D. R. Prevost is the Manager of the Company.

SACK, W. M.—Self-Acting Liquid Measure; Self-Cleaning Compression Filtering Faucet.

This invention, for the automatic measuring of liquids without measures or utensils of any kind, can be attached to any oil tank, cask or receptacle of of fluid now in use. By its action the contents of a vessel are preserved from destruction or evaporation by the atmosphere; no residuum can form, and it is guaranteed to prevent wines or malt liquors from becoming acidulous. No smell or drip can occur from a vessel to which this measure is attached, it is certain in its action and, it is asserted by the exhibitor, if once tried by retailers it would be deemed indispensable afterward. The Filter is a new invention, and has the following important feature: Being self-cleaning, it never gets clogged and filled up, like other filters, with dead and decayed animal matter. Its working is so simple that it can be operated by a child three years of age. Leaking is an impossibility, there being no ground joint, but instead, a simple compression. If a large flow of water is wanted for washing, irrigating, etc., it need not pass through the filter at all. In this manner a double flow is secured and twice the quantity of water obtained in the same length of time than through any other faucet in use.

SANBORN, A. W.—Express Wagon, Thorough-Brace Wagon, and Delivery Wagons.

Mr. Sanborn's specialty is the manufacture of wagons for hard service, in which he has achieved an enviable reputation. Perfect workmanship, the best material and latest improvements in running gear, are the component parts of each wagon that leaves his shop.

SANDERS & Co.—Bottoms of Steam Kettles for Philadelphia Brewery.

These bottoms, of copper, were for kettles twelve feet in diameter, holding 200 barrels each. An immense amount of sheet copper is used each year on this coast in manufactures, which ought to be made here, as an unlimited amount of copper ores exist in this State, of which large quantities are annually shipped to the States and Europe for reduction.

SANFORD, A. B.—Hall's New Pulsometer, Hot Water Heater, Steam Trap, Dean's Pumps.

SAN FRANCISCO GAS LIGHT Co.—Samples of Sulphate, Chloride and Carbonate, Boiler Preparation, Liquid Ammonia, etc.

Made from the waste materials of gas manufacture and utilizing a product that for many years was dumped in the bay as refuse. The consumption of the above compounds is steadily increasing, the Gas Company having been obliged to largley increase their capacity for manufacturing to supply the demand.

S. F. CHRONICLE.—Stereotype Process of Newspaper Printing.

The *Chronicle* is the only Journal of this city that has seen fit to illustrate the art of stereotyping at the Fair, and which was viewed with great interest by visitors. The exhibit showed every stage of the process: the paper molds from which the stereotype plates are cast, the rough plates as they come fmor the molds and the finished ones as they go on the press; also the process as applied to cuts for illustrations; also a roll of paper as used for the *Chronicle*, which weighed 1,250 pounds, and was four miles in length.

SCHAEFER, Miss D. R.—Display of Flowers.

This pleasant and affable young lady displayed rare good taste in the selection and arrangement of her floral exhibit, specimens of which were eagerly sought for by the gentlemen to present to ladies or decorate their own person.

SCHMIDT, Mrs. Louisa,—Fancy Basket.

Made of colored worsteds, and a very pretty hanging ornament.

SCHOENSTEIN, F. B.—Orchestrion.

This instrument is a whole band in itself and a great attraction. It was partly built at Baden, Germany, and completed in this city. It contains some 500 different pipes, and makes up the music of every known civilized musical instrument, even to tenor and bass drum, cymbal, triangle and bells. It is wound up on four different cranks, the driving power being 750 pound weights. It has twelve cylinders, each six feet four inches in length, set with thirty pieces of music, including St. Patrick's Day, Carnival of Venice, Reception Lancers, La Tirine, Merry Wives of Windsor and patriotic airs, polkas, schottisches, watlzes, etc. Cylinders with other airs can be made at any time by the exhibitor. The tone of the instrument is soft and pleasing, yet strong enough to fill quite a large hall. With all the noise of machinery and tramping in the Pavilion, its leading notes were heard some distance; and when the tuba-bass, drums and cymbals struck in, it was very pleasant and inspiring. It played a few minutes every evening.

SCHROEDER, Wm.—Inlaid Work.

SCOTT, E. A. & Co.—Davis Wrought Iron Header Wagon; Davis Wrought Iron Farm Wagon; La France Steam Fire Engine.

This exhibit was both useful and beautiful. The wagons demonstrate the feasibility and desirability of the use of iron in construction of farm and header wagons, and "La France" is a combination of use and ornamentation that would hardly be unsightly in a hotel drawing room. The wagons are specially adapted to the variable climate of California, with its fog and rain for five months, and its drought and hot winds of seven months, without any extreme variation of temperature. By reason of the shrink and swell of the wood work of wagons in the interior of the State, the life of a vehicle at constant work is not more than three or four years. The Davis wagon, made entirely of the toughest wrought iron, as one may convince himself by twisting a spoke, will not shrink or swell from drought or dampness, and the different degrees of heat are not sufficient to affect them, as might be urged where the mercury ranged so low as 30° below zero. Furthermore, this wagon, though all of iron but the reach and pole, is not so heavy as a wooden wagon of the same strength of axle and wheel. A 1¾ wagon with bed and brake complete, only weighs 1200 pounds, with a carrying capacity of 4,000 pounds, while most wooden wagons of that size run from 1,300 to 1,450. The wheels are put together with bolts, and the boxes can be at any time taken out and new ones put in by anyone who can use a monkey wrench and hammer; so also of the spindles. The double-trees are of steel rods, easing any jar on the horses by their elasticity. Thousands are in use in the East, and the Government has ordered a lot for army use, after thoroughly testing them.

The "La France" is as handsome a piece of nickel plated work as ever rolled into the Pavillion. The following points of superiority are claimed for this engine: Its boiler is of the best tube pattern, in which the drop tubes are arranged in clusters composed of nine tubes, each cluster having a single connection at the top with the crown sheet; and at the bottom with the "leg" of the boiler, thus securing a large amount of heating surface in a comparatively small space, rendering it the quickest steaming boiler yet obtained by automatic circulation, strength to crown sheet by reason of fewer openings being required; abundant room for smoke flues; perfect circulation, which is maintained so long as any water remains in the boiler, insuring perfect safety and preventing the deposit of sediment at exposed points. This boiler is guaranteed to generate thirty pounds of steam in three minutes and eighty pounds in five minutes, starting with cold water, and can throw water inside of four minutes from the time of lighting fire, with fifty to sixty pounds of steam. The engine and pump are rotary, with special provisions to take up wear and render the case steam and water tight at all times.

SELLERS, Mrs. S. A.—Household Silk Culture, French Annual Cocoons, Japanese Annual Cocoons, Bevoltines, Reeled Silk, Raw Silk, Silkworm Eggs, Silkworm Moths.—See page 51.

SEYMOUR & SABIN.—Threshing Machine, "Minnesota Chief."

SHELDON, Mark.—S. M. Co.—Sewing Machines: Davis, Howe, New Stewart, Household, Chicago Singer. Samples of Work.

This was a remarkable and fine display of the above machines, occupying a space and raised platform 20x80, enclosed with a neat railing tastefully painted and gilded. A number of skilled operatves and polite attendants were constantly present to explain and illustrate the practical working of the various machines. Mr. Sheldon's long experience and business qualifications have taught him the advantage of placing his goods before the public in the best possible style.

SHERRILL PLOW COMPANY.—Gang Plows, Gang Combined Plow, Seeder and Cultivator.

This is a new and patented invention, recently introduced on this coast, and for which is claimed the following points of advantage:

1st. Light Draft.—Its construction makes it lighter draft than any plow made. It requires thirty to forty per cent. less draft than any other plow. 2nd. Each plow has an independent vertical movement, and naturally conforms to all inequalities of the ground, whether rolling or hillside, plowing all to a uniform depth. On all planes its operation is the same, and performed without adjustments or delays. 3d. The plow being below and independent of the frame, all strain is taken from the wheels and frame, thus making them more enduring than any other plow made. 4th. The light draft of the Sherrill Plow will save the use of a span of horses, as compared with any other gang plow, the feed of which for a season would cost more than the price of a Sherrill Plow, to say nothing of the cost of the horses and harness, shoeing, etc., and wear and tear, damages and accidents, such as sickness and death of the animals. 5th. It combines three implements in one, each gang has two sets of plows, one for deep plowing and the other for crossing summer fallow or plowing in seed, and a seeder, a combination that saves the cost of the plow were each to be bought separately, as would be the case with any other implement. 6th. It can be adjusted in the easiest and simplest manner to cut any depth required. 7th. The driver has no occasion, when plowing, to leave his seat to handle any lever; they are so easily handled, and work with such ease, that any boy who can manage a team can manage the plow; there are no complicated movements, every part is simple and perfectly adapted to the work required. The plow can be raised or lowered by a simple and easy move while the plow is in motion, and without checking the speed of the horses. 8th. There is no strain on the horse's necks; the pole is loose-bearing, the draft central; no side draft.

SHRIEVE & WOLF.—Guns and Pistols.

This display of fire-arms comprised specimens of the most noted makers, including rifles, shot-guns and pistols. The exactitude and mechanical skill necessary to produce such fine work is of the highest order, and brought to the utmost perfection in our American factories, who now largely supply the wants of the great Eastern powers

SIMMONS, S. D.—Bread Cutter.

A recent and patented invention of much merit, whereby bread can be sliced to any desired thickness and with great rapidity.

SLOCOMB, H. & Co.—Dibble Lubricators—on Main Engine and Garratt's Steam Pumps.

This lubricator, though a comparatively new one on this coast, is being rapidly introduced since its operation has been seen by steam users. In the Eastern States, where it has been longer known, a great many are in use, there being over 1,000 at work in the city of St. Louis alone. The appliance was in operation on the main engine and several pumps in the Fair. The advantages claimed for the Dibble lubricator are as follows: Great economy in oil by its perfect regularity and visible feed; more power from engine on account of its internal friction being reduced; greater sensitiveness of governor; longer wear of piston and valve than packing; no cutting of piston and valve rods; simplicity and durability.

THE SINGER Manufacturing Company; Singer Sewing Machine Company.

The space occupied by this firm's exhibit was fitted up and decorated in a very tasteful and expensive manner. These machines are too well known to require any praise, 356,432 having been sold in 1878.

SLOSS, LOUIS & Co.—Leather Hides.

This display consisted of one enormous hide of sole leather flanked by two ordinary ones as a contrast.

SMITH, Capt. B.—Display of Californian Inventions.

These inventions (mostly models) included a great variety of subjects original with the exhibitor. Among them was a churn, constructed of copper and zinc, by which butter could be made in 30 seconds from fresh milk with a greatly increased yield over the ordinary churn. Electricity (voltaic) is the principal agent used to accomplish the work.

A vehicle operated by foot power and intended in a measure to take the place of buggies, was another invention, and which has been tested by a full-sized machine, working indifferently well. Several agricultural implements and household utensils were included, and, lastly, an elaborate and wonderfully-constructed machine for mixing lottery tickets.

SNOW, John T.—Waterproof Crape, and specimens of Dyeing.

By profound study and long experience Mr. Snow has become a thorough master of the art of dyeing and renovation of fabrics, and persons entrusting articles to him may feel assured they will be treated in a scientific and workmanlike manner.

SOUTHER, Jos. N. & Co.—Dr. Abernethy's Green Ginger Brandy.

This standard remedy is intended to be a direct substitute for the so-called Essences and Extracts of Ginger, and contains in the purest and most concentrated form all the aromatic and stimulating properties of this most valuable root. It retains its crystal clearness when mixed with water, there being no inert resinous matter held in solution to cause a turbid appearance by precipitation, whereby all other preparations are rendered so nauseous and disagreeable. It is a well-known fact, among the medical faculty, that true Jamaica Ginger is one of the most acceptable of stimulants to the stomach, imparting a healthy invigoration to the lassitude so common at times to all classes, from whatever cause produced, without any debilitating reaction whatever. In the report of an analysis by one of our best Analytical Chemists, he says: "I find all its ingredients to be of the very best quality, quite free from fusel oil or other deleterious matter; its flavor excellent, and, of resinous matter, a trace only. It can be safely recommended whenever the use of a preparation of Ginger is indicated." It is also strongly indorsed and recommended by the medical faculty and the various Pharmacists of the coast.

SOPHY & McAARON.—Rockaway.

Though not an extensive exhibit, it was enough to attract considerable attention and elicit warm praise from competent judges of carriage work.

STANDARD SOAP COMPANY.—Soap.

Every year this enterprising company selects a commanding stand and then elaborates, out of simple but beautifully-colored soap, architectural designs of rare skill and merit. One year a temple and another a pretty arbor or alcove, in which all the varieties of the finest toilet soaps manufactured in the United States are to be found. Mr. Thomas, the proprietor of the establishment, deserves the greatest credit for producing such a beautiful display. The exhibit, this year, was on the main floor of the Pavilion, near the Market street entrance, and was one of the best in the building.

The company was organized in 1860, and in 1875 the present works were erected at Berkeley, Alameda County. The grounds are 300 x 600 feet. The building is 250 feet long by 150 feet wide, and is four stories in height, all of which are occupied by the necessary machinery for carrying on the various processes incidental to soap boiling and making. Store rooms are detached from the main building, and are in size 50 x 250 feet, having a tramway for removing goods and stock to and from the factory, used for storing the raw material used in the industry, such as tallow, caustic soda, rosin, etc., the latter of which are purchased by the invoice long before arrival, and at the lowest possible prices, thus enabling them to manufacture more cheaply than most others can. There are two ells at either end of the main building each 40 feet by 120, which are needful for the work of manufacture; also, an engine and boiler room detached from the main building, where steam is made for heating. The furnaces are connected to a mammoth brick chimney 12 feet square at the base and 150 feet high. Attached to the works is a large planing mill where all the boxes needed in the establishment are made. There is a large wharf for the loading and unloading of the boats and vessels. Something of the magnitude of the buildings can be had by knowing that about two million feet of lumber was used in their construction.

The company own the steamer "Mare Island," which runs between their works and San Francisco. This company is one of the most successful on this coast; their products being well-known in the East, Chile, Peru, China, Japan and the Sandwich Islands; and wherever their soaps come in contact with those made elsewhere, the superiority of the Standard is acknowledged.

STANFORD, C. P.—One-Wheel Battery or Crusher.

STEVENS, H. R.—Vegetine.

STETTIN, Mrs. H.—Stamping Chenille and Linen Embroidery.

In all that pertains to needle-work, Mrs. Stettin ranks as first-class, and, whenever premiums are awarded, invariably receives the highest.

STILL, W. G.—Hitchcock Kerosene House Lamps; Perkins & House Library Lamp; Catlin's Improved Student Lamps; Leader Student Lamps; Novelty Lamps.

This was the finest display of lamps in the Fair; their good qualities, neat arrangement and real merit was noticed by all. Each year new and valuable improvements are added to the burning arrangements of coal oil lamps, until they now rival gas in steadiness and power, and the light is of course cheaper.

STILES, W. C.—Grain Pulverizer.

This mill, though only 25 x 30 inches, can be made to perform an immense quantity of work. The frame work is of iron and the grinding faces are steel and corrugated, and act like revolving shears. By means of a small set screw between the boxes, the faces may be set to make the flour coarse or fine, as desired. The inventor claims that the one exhibited can grind with ease fifteen tons of barley in twenty-four hours, and with one every farmer can do his own grain grinding at home. Its weight was about 500 pounds, including the frame. The exhibitor was the inventor and a resident of Nevada City.

STODDARD, Jas.—Patent Hydrant Attachment.

This recently-patented improvement on hydrant connections has been tested in the San Francisco Fire Department and proved a success. The advantages claimed for this connection are: 1st.—It being made of brass, it will stand the pressure of any hydrant. 2d—It being telescopic and adjustable, it can be readily connected. 3d—The flow of water from the hydrant to the engine is not obstructed by bends, but has a direct flow from hydrant to engine, the ball at either end acting as a reservoir. 4th—When the connection is made and the joints set up, it is perfectly tight, the ball at either end being supplied with a rubber washer. In the center there is a packing box for the Slip Joint, and, when connected, is complete and reliable. These pipes in size are 2½ inches and 3 inches, but can be made any size or length.

STRONG, Geo. H.—48-inch Harvard Roadsters; American Center Velocipede; Safety Bicycle "Pony;" 50-inch "Club" English Roadster; Patent Safety Bicycle "Extraordinary Challenge;" 54-inch "Stanly" English Roadster; Hillman & Herbert Coventry Tricyle.

A very pleasant feature introduced on one or two evenings was an exhibition of the bicyles on the main aisles of the Pavilion, which were kept clear for the purpose. Several experts perched precariously on top of these two-wheeled vehicles gave a display of fancy riding that, for speed and daring, has been rarely equaled, and received unbounded applause from visitors. A final feature was the riding of the three-wheeled bicycle by a well-known gentleman of this city, who moved slowly along the level floor and around a corner with the utmost grace and serenity with scarcely a semblance of fear. Capt. Strong is President of the Oakland Club, an accomplished rider, and a great enthusiast of the sport.

STROBRIDGE, J. H.--Fleeces of Wool.

A single fleece of wool exhibited in a square 14x18 inches, weighing 18 pounds, the produce of a single clip from a Spanish Merino ewe.

SPENCER, F. W.—Automatic Foot-rests.

These foot-rests are an attachment for rockers, whereby the pleasure and ease of the rocking is much enhanced.

STUDABECKER, J. H.—Tailors' Square.

With this square, and the instructions accompanying it in book form, it is claimed that any one with a little practice can cut clothing to fit all forms equally well.

TANT, Mrs. T. W.—Piece of Embroidery.

TATUM & BOWEN.—Light-drop Continuous-feed Lubricators, Hall's Patent Valve Engine, Electric Light Engine, Albany Lubricating Compound and Cups.

TAY, Geo. H. & Co.—Display of Stoves, Ranges, Coffee Pots, etc. Own Make.

This fine display of California-manufactured Stoves from their foundry at Alvarado, for beauty and finish would compare and equal the best Eastern castings. This firm gives employment to a large number of our youths, their aim being to encourage local industries in every possible manner. They also manufacture every kind of tin, copper, Japanned and sheet iron-ware. The good qualities of the Boss Coffee Pot was practically shown during the Fair, proving its use to be a saving and improvement of 33 per cent. over the ordinary pot.

TAYLOR, S. P. & Co.—Paper from the Pioneer Mills and South Coast Mills.

One of the most important industries on this coast is paper-making, and the display of this firm shows that as to quality, weight and texture their goods are equal to any imported. The paper exhibited by this house gives but a faint idea of the amount and variety of the material manufactured and kept in stock by it. Mr. Taylor inaugurated the paper-manufacturing business at the Pioneer Mills, in Marin county, in 1856. He has now in his possession an *Evening Bulletin* of April 13, 1857, printed upon paper by him then manufactured, which is firm and smooth though slightly discolored. Of late years he has confined his attention to the various grades of manilla and straw papers, of which former kind the Pioneer Mills make 300 tons per annum, besides fruit paper—a fine, soft rag paper, which he has made a specialty of ever since the opening of the Central Pacific railroad. Of this he has a call for 80 tons this year. The South Pacific Coast Mills, Soquel, Santa Cruz County, turn out 700 tons of straw paper, using in the manufacture about 1,200 tons of material.

TAYNTON & DERRICKSON.—Adjustable Header Wagon.

Although the major part of California's broad acres of grain lie upon the great plains of the Sacramento and San Joaquin, still thousands of acres in the foot-hills and the Coast Range are cultivated whose edges lie upheaved toward the sky at a greater or less angle of inclination. In Sonoma and Marin counties thousands of acres of excellent land are yearly sown in grain where the ground is too steep for ordinary header wagons, with their low one-sided beds, to receive and retain anything of a load. To overcome this law of gravitation, Messrs. Taynton & Derrickson have invented and patented an improved adjustable header wagon, whose value is self evident, and any farmer experienced in farm machinery will at a glance perceive its practicability and principle. When the wagon is loaded it can carry its load to the stack without danger of upsetting or sliding, oftentimes a difficult matter with the ordinary fixed header bed. The principles involved in the invention are the simplest known in mechanics, answering the purpose admirably, and are not likely to get out of order.

TERREA, Mrs. E.—Knit Quilt.

THATCHER, Geo.—Cremorne Punch.

THERIEN, J. H.—Patent Windmill.

THOMPSON, Geo. C.—Soda Stands.

Mr. Thompson for a number of Fairs has supplied the thirsty with his well-known and favorite soda. Careful and obliging himself, with polite and attentive assistants his management gave the utmost satisfaction to visitors and the officers of the Exhibition.

THOMPSON, I. D. & SON.—The Governor Patent Medicine.

TIEROFF, Miss Pauline.—Crotchet Quilt.

TITUS, J. T.—Patent Sewer Trap,. Gas, Tide and Flushing Gate Combined.

This is a Californian invention and manufacture, and claimed to be very effective. It has been subjected to the most severe tests by persons versed in sanitary engineering, who heartily commend it for general adoption.

TONITE POWDER COMPANY.—Show-case of samples.

TOPLITZ, J. B.—Shirring Machine.

This is called the "Heberling" and is adapted to the preparation of the various descriptions of "Shirring" now so much used in all kinds of ladies' garments, with an elegance and precision far surpassing anything that can be done by hand.

TORELLI, P.—Patent Sewer Trap.

TOTTEN, Chas. A. L.—Strategos (American Game of War.)

This exhibit attracted but little attention as only those skilled in military engineering or accustomed to direct battle movements could readily understand the principles of the game.

TOWNSEND, Miss J.—Tatting Bed Spread.

TULE CARPET LINING COMPANY.—Carpet Lining and a Needle Sewing Machine.

The utilization of a hitherto useless and valueless weed is now becoming a large and profitable industry. Tule is a tall, strong, soft reed grass which grows on the low lands back from the river bank, in all the large valleys, and bordering on many of the lakes of California. The submerging of its roots for a considerable part of the year is necessary to its life, and it will grow up through six or eight feet of water. It is seldom thicker than one's thumb, and often 12 and 15 feet long. Soft and tough, it is sewn together by an ingenious machine, then rolled to flatten it down, which makes an excellent lining for carpets, and one that moths will not trouble, which is a great desideratum in California where more carpets are eaten up than worn out; besides, the carpet wears much longer than with any other known lining, and is easier to sweep, and not so dusty. The machine used at the Fair sewing this tule into carpet lining was invented especially for this purpose, and runs four needles at once, sewing the tute in four places, thus making it strong. firm and uniform.

TURRE, Misses—Point Lace, Silk, Worsted, Chenille, Gold and Silver Embroidery, Lamp-Mats, Aprons, Fire Screen, Sofa Cushion made with Devil Point, Crochet Work, Needle Work, Applique Lace, etc.

A large glass case twenty feet long and ten feet high was filled with specimens done by these talented young ladies recently from Paris. They give instruction in the above work, which was warmly praised by all judges of fine needlework who examined it.

TUSTIN. W. L.—Rotary Ore Pulverizing Mill Designed for Wet or Dry Work.

The Tustin pulverizer has been thoroughly tested by expert millmen, who pronounce it a decided success and the only rotary mill that can successfully compete with, and excel in quantity and durability the old-time stamps. One of these machines is working every day at the ore-sampling and pulverizing works, 415 Mission street, and the following extract from a letter from the proprietors to the inventor is of interest:

"During the eight months which we have had your Pulverizer in our establishment, we have subjected it to many fair and thorough trials, and in each instance it worked to our entire satisfaction, and far exceeded any machine which we have ever used in pulverizing ores. As we receive ores from all parts of the country, we had every opportunity to test it on all kinds—

hard and soft—and always found it meeting our expectations—even on manganese ore, the terror to all Pulverizers, Stamp, and Buhr mills, it worked with a No. 40 Mash screen at the rate of seven tons in twenty-four hours.

"Another feature of great merit in your machine is the fact that on all rich ores, which contain more or less native or virgin metal, it acts as a perfect dry concentrator, as it discharges all the fine ore and small pieces of metal through its screens, and retains the pure bullion, which can easily be extracted by removing one of the screens and allowing the machine to make a few revolutions.

"The small amount of power it requires to work it is one of its main points, as about one and one-half horse power was found to be more than sufficient on the very hardest ore to which it was subjected.

"The other points of advantage and superiority over all other machines hitherto used by us, is the simplicity of its construction, the absence of all complications, together with the fact that only two or three heavy cast-iron rollers do all the work, does away with all apprehension of frequent breakage or getting out of order—which latter fact is so much dreaded at mills and mines which are more or less distant from available points for repair.

"Aside from the foregoing facts of the capacity and simplicity of your Pulverizer in general, we will not omit to mention the automatic feeder or hopper which is attached to your machine, and which is essential in point of economy of labor."

TRUWORTHY, F. M.—Stencil Plates.

These plates were of various sizes, handsomely lettered and ornamented in elegant styles. He also exhibited some finely-cut wood stamps or patterns for burning brands, that show the excellent character of his work in this line. His establishment, 318 Front street, is a historical alphabet of business changes in San Francisco, so numerous are the specimens of stencils cut by him in the last twenty years.

VAN SCHAICK, L. H.—*Ulster County Gazette*, of 1800; *Pennsylvania Gazette*, of 1761.

These relics and records of the early history of our country are becoming rare, and a curiosity to the present generation.

VAN SCHAICK, Mrs. R.—Patchwork Quilts.

VIENNA MODEL BAKERY.—Bakery and Café.

This popular and well-known café had a large and nicely-decorated refreshment saloon in the gallery for ice cream, coffee, etc., and also a lunch room below, where visitors could obtain the more substancial articles of food.

VULCAN POWDER COMPANY.—Show-case of samples.

WALCOM, G. W.—Hansen's Improved Sofa-Bed, Household Treasure, Adam's Patent Pillow-Sham Holder.

The household treasure is an improved kitchen table. The sham holder consists of a wooden rod attached to the head of the bed, and having a wire frame to come down over the pillow upon where the sham rests, being pinned to a tape at the upper edge. At night the frame is turned up against the head-board, carrying with it the shams.

WATTS, N. C.—Floating Dry Dock.

The inventor of this improved system of raising vessels is sanguine of its being generally adopted as the best and cheapest method yet invented; and particularly needed on this coast where dry docks are so few and charges high.

WALL, Charles.—Substitute Bay Window.

A combination of mirrors so arranged that a person inside of a room can see the street in both directions without being seen.

WARREN, Col.—Eucalyptus Tree Productions and Collections of early Productions of California.

The eucalyptus, so valuable and important to this State for its wood and shade, and to man for its medical properties, has an earnest and able advocate in Col. Warren, who uses his utmost endeavor to make its virtues better understood. His display showed the wood as prepared for many purposes and also various mendicaments compounded from its bark and leaves, particularly valuable in cases of fevers or rheumatism. His collection of the early products of this State contained many articles of historic interest, notably the first sack of flour. His reminiscences of pioneer life and times, as told to visitors, was an entertaining part of the exhibit, for he was then as now an earnest, energetic worker for the advancement of the interests of this State, and of right and justice to all mankind. For nearly thirty years he has published the *California Farmer*, of which he is the founder and owner.

WEBSTER, J. H.—Fret Sawing.

A variety of articles made from white holly-wood for ornamental purposes.

WHITMORE, E.—Buggy with Whitmore's Improved Gear; Buck Wagons with the same.

This improved gear is an end spring connecting to the axles close to the wheel, the circle iron being above the spring, and the king-bolt working freely through the axle with the rise and fall of the bed. It is especially adapted for buggies and buck-boards on pavements and rough roads. All joints are rubbered, preventing rattling, and by unscrewing two bolts the caps connected with the king-pin may be removed, allowing ef a new packing of rubber, rawhide, or any suitable substance, when needed.

WICKSON, G. G.—Eclipse Self-Regulating Incubator; Artificial Hovers; Display of Imperial Egg Food; Assortment of Poultry Works.

This exhibit consisted of two Eclipse Self-Regulating Incubators shown in full operation, hatching daily the young chicks, ducklings and quail, being well-cared for by artificial mothers arranged in rearing pens, the whole process from the egg up to almost broiler age being successfully demonstrated. These noteworthy machines have formed no mean part of our Fair for three successive years, and it is interesting to see the improvements made in them from year to year, this year's being wonderfully simplified and perfected. A pyramid of the Imperial Egg Food in this exhibit was an object of considerable remark.

WIESTER & Co.—Oil Stoves, Household Utensils, Useful Inventions.

This display was a veritable museum of articles for household use, and readily understood by the aid of a fine illustrated catalogue published for general distribution.

WILKE, Miss F.—Crochet Mat.

WILLIAMS & Bourne.—Multiplex Copy Tablet.

A valuable, convenient and labor-saving invention for obtaining copies of writings or drawings without the aid of a press or other similar appliance.

WILLIAMS, HARLOCK & Co.—Soldering Machine.

The working of these machines was practically shown during the Fair by having them in operatien day and evening, manufacturing an immense number of cans for fruit and other purposes.

WILMERDING & Co.—Peruvian Bitters.

WILLMORE, WM.—Mirabile Dictu.

Mr. Willmore is the inventor and manufacturer of this valuable article and also the inventor of the name, which was no easy matter. "Wonderful to be told," it is a liniment for all the ailments of life.

WILSON, Mrs. T. A.—Patent Spool Holder.

A very convenient and useful article for a lady's work table.

WENZEL, Geo. L.—Grape Crusher, Separator and Wine Presses.

Mr. Wenzel, after long experience and practice, has at last, as he claims, perfected and placed in the market the best outfit yet invented for converting grapes into wine,

WOLF & BODLEY.—Eldridge and Williams' Sewing Machine.

WOLFFSOHN, N. W.—Kid Gloves.

This large and fine display of gloves in great variety and style were imported, and of very fine quality.

WOMEN'S SOCIAL SCIENCE ASSOCIATION.—Fancy Work.

Mrs. Stow, the well known President of this Association, superintended the arrangement of this exhibit of women's handiwork, which also included copies of the paper published by her and devoted to the advancement and rights of her sex.

WOOD, Wm. Harrison.—The Peerless Folding Bedstead.

The inventor of this bed, Mr. H. Wood, is a well-known member of the typographical fraternity of this city. It is neat, compact, convenient and cheap; and calculated to meet the necessities which have called it into being.

WOODWARD, W. W.—Adam's Synchronological Chart of History.

Without question this is the most valuable, reliable and complete compilation of historical facts within a small space that has ever been prepared, and is heartily endorsed and commended by all who have examined it, including the most learned and competent scholars in our land.

WOODIN & LITTLE.—One new Improved Althouse Vaneless Windmill.

At the present time it is unnecessary to say but little as to the advantages which windmills afford and the inconveniences which they overcome. Within a few years various improvements in the building of these machines have made them an efficient and cheap power. In localities where they are known they are considered a necessity to every farmer, and are the cheapest farm machinery, For any large stock farm a windmill will save every year more than it cost. When people have to pump from a well with a hand pump to supply water for house and stock purposes, the time and labor required are a serious tax, and especially so if wells are deep and a large quantity of water is required. Stock is watered from marshes and stagnant pools to the manifest injury of the animals, because of the labor required to draw a sufficient supply of pure water from the wells.

These mills are manufactured here and are simple in construction, perfect in self-regulation, strong, durable and cheap. The principle on which this windmill is constructed is the only one by which the speed of any machinery is successfully regulated—that of applying centrifugal force. The simplicity of the devices by which the windmill itself regulates its own motion, and the completeness with which it does this, are among its merits. The result of its self-regulating machinery is, that no increase of wind increases its speed.

WOOLHOUSE BROTHERS.—Sunlight Gas Machine.

It is claimed by the exhibitor that this machine is new and novel, and the most perfect brought before the public. It requires scarcely any care and no skill whatever; it needs no separate building, tank or cellar; works equally well in any part of the house, and at all seasons, and supplies a large unflickering brilliant light, at the bare cost of the material, or at half the cost of coal gas, without waste or labor. It is entirely odorless, absolutely safe, having no gas meter; requiring no heat, water, flannels, sponges or chemicals. They are made in any size and capacity, from ten to five hundred burners.

WOODWARD'S GARDENS.—Wm. Woodward, Manager, Natural History; Plants, etc.

The collection from the Zoological museum consisted of a scientific series of mounted California mammals and birds, and, to compare these, numerous specimens from various parts of the world were exhibited. Among them various monkeys, a young African lion, jaguar, ocelot, lynx, bears, wolverine, bats, opossum, kangaroo, squirrels, beaver, porcupine, prairie dog, armadillo, sloth, ant-eater, platypus, deer, seal, etc.

Some of the birds were: a condor, eagles, falcons, owls, parrots, woodpeckers, toucans, cuckoos, humming-birds, warblers, thrushes, fly-catchers, chatterers, butcher birds, crows and jays, birds of Paradise, starlings, finches, kingfishers, pigeons, quails, grouse, pheasants, young ostrich, plovers, herons, snipes, rails, ducks, geese, swans, divers, auks, petrels, pelicans, gulls and terns.

The botanical collection consisted of three groups: Flowering Plants, Foliage Plants, Ferns. Some of the most prominent plants were palms in variety; dracænas, crotons, begonias, coleus, gesneras, fuchsias and some choice orchids in bloom, and a mixed collection of stove and green-house plants. Among the ferns was a grand specimen of adiantum farleyense, several fine plants of adiantum cuneatum, (the maiden hair fern) the curious bird-nest fern and about fifty varieties of choice exotic ferns.

WOOLSEY, I. S.—Patent Self-discharging Gopher Trap.

The advantages claimed for this invention for destroying the great pest of the farmer, is, that it will discharge and reset itself automatically, which is unquestionably a great improvement.

THE PAINTINGS, IMPRINTS,

ENGRAVINGS, BRIC-A-BRAC, ETC.

EXHIBITED BY

HON. WM. J. SHAW.

The collection of paintings were mostly purchased in Spain by Mr. Shaw during the time of the late civil war in that country, when many of the finest pictures were hurried into market in Madrid, or sent across the border into France. They were exhibited for a short time in New York and then sent to San Francisco; and this was the first time, since their arrival, that the collection has been exposed to the public. The other articles were obtained during his recent travels in the East, particularly Ancient Egypt, Syria and Persia. The Managers are under deep obligations to Mr. Shaw for his kindness in so materially aiding them in making the Art Gallery of this Fair, as universally acknowledged, the finest and best exhibition of Art ever given in this city.

PAINTINGS.

“Holy Family,” . . . . . . *Albert Durer*

Very old. Quaint costumes of the period.

“Capture of Cornwallis,” . . . . *Benjamin West*

This little hasty and poor picture which West, no doubt, never thought would be preserved, is said to have been hastily painted, to give a jocose description of how Cornwallis was captured, when the news of that event first reached London—West being an American by birth. The front redcoat on horseback is said to represent the features of Cornwallis, who was personally known to West.

“Mystic Picture,” . . . . *Joseph de Paez*

A quaint picture representing the Transfiguration of the Mother, dressed in the costume of a religious Order.

“Very old Portrait of a Monk of St. Bernard,” . *Unknown*

“The Virgin de las Mercedes,” . . *Atonzo Cano*

With “the founders of the Order de los Mercenereos de San Pedro Nolasco.” This painting was the property of the Convent of Dominicans of Alcala de Eneros.

“The Annunciation,” . . . . . *Unknown*

“A Landscape,” . . . . . . *Klomp*
A modern picture.

“A Game of Cards,” . . . . *David Teniers*
Between two old men.

“The Corn Doctor,” . . . . *David Teniers*
Small panel.

“Aurora Touching the Earth,” . . . *Unknown*

“An Old Vegetable Market in Holland,” . *Pelue Eunoin*

This valuable old painting was the property of Doctor Don Luis de Portilla of Madrid, Spain.

“Henrietta Maria, Wife of Charles I,” . *J. B. Monnoyer*

A Queen of England. This picture was rescued from the Tuilleries Palace after it was set on fire by the Communists.

“Dean Swift,” . . . . . *Sir Godfrey Kneller*

Life-size portrait of the famous Dean, half length. It was many years in the Gallery of the Duke of Buckingham at Stow, England.

“Queen of Sheba Welcomed by Solomon,” . . *Unknown*

“Pope Leo X. and two Cardinals,” . . *Raphael*

An old copy of the famous painting by Raphael, still in the Vatican, giving the portraits, in their full canonicals, of Pope Leo X. seated, Cardinal Rossi at his left, and Cardinal Gulio de Medici (afterwards Pope Clement VII.) at his right hand.

“The Spanish Bambino,” (Golden St. Luke.) . *Unknown*

This picture was sought for by the Directors of the Spanish National Gallery at Madrid; but its Spanish owner, Doctor Don Luis de Portilla, of Madrid, refused to concede it without first being paid its value; otherwise this remarkable picture would to-day be in that great gallery at Madrid, instead of being here in this collection at San Francisco.

“The Babe Christ,” . . . . . . *Unknown*
Lying asleep, resting on a skull.

“The Flagellation of Christ,” . . . *Unknown*

A very old painting, on thick oak panel, broken from a Christian church at the time of the Reformation.

"The Mater Dolorosa," . . . . . . *Titian*

"Yea! a sword shall pierce thine own soul, also."

"The Virgin of Seville," . . . . . *Murillo*

Child in her lap, cherubs, etc. This valuable painting was the property of the family of the Duke of Rivas, Spain.

"The Virgin of Pilar," . . *Clodio Coello,* 1677

Patron saint of Saragosa, appearing to St. Francis, prior to the Stigmata.

"The Crucifixion," . . *Van Dyke, or his School*

A powerful picture of the Execution on Calvary; the City of Jerusalem in the distance.

"The Holy Family," . *Carlo Dolce, Type of Lombardy*

Cross on floor; lamp upset upon it.

"Ecce Homo," . . . . . . *Titian*

This painting is on distemper.

"The Martyrdom of St. Catherine," . *Paul Veronese*

"St. John in the Wilderness," . . . *Correa*

"The Return of the Prodigal Son," . . *Benvenuto*

The younger brother holds up the tent door; the father rushes with open arms to receive his lost son, who eagerly longs for the embrace, but shuts his hands instead, saying: "Not yet, O father; I have sinned against you, and am not worthy of this."

"Portrait of Lord Canning," . *Sir Thomas Lawrence*

This painting was purchased in London of descendants of this once famous Prime Minister of England.

"Portrait of Charles I," . . . . *Unknown*

The unhappy Charles I., King of England.

"The Holy Family," . . . . . . *Correa*

St. Catherine, a poetical or traditionary companion of the "Mother," holding fruit in her fingers.

"The Incredulity of St. Thomas," . *School of Castilla*

"The Immaculate Birth of Christ," . . *Murillo*

This painting of "The Miraculous Birth of Christ" was valued in New York, by competent authority, at $7,000.

"The Day of Judgment and Resurrection of the Dead,' *Charles Lebrun*

A vastly-labored and wonderful painting, giving the Orthodox Church view of the time of its execution,

"The Madonna," . . . . *School of Raphael*

When she met Christ and said to Him, as per the old Latin inscription which surrounds this painting in letters of gold: "Lo, your father and I, sorrowing, have searched for you."

"The Sacred Confessional," . . *James Northcote*

A fatherly good old priest of the Order of barefooted Friars hearing the blushing confession of a young Italian girl. This wonderfully-powerful picture was painted by Northcote during his residence in Italy.

"And He made Man in His Own Image," . *Unknown*

"The Adoration of the Magi," . . *Paul Veronese*

A superb old Venetian painting, of great value. "They saw a young child with Mary, his mother, and fell down and worshipped him." "And they held him by the feet and worshipped him."

"St. Rose in Ecstacy," . . . . . *Murillo*

Crowned with roses, her beautiful hands against her breast. This valuable picture was the property of the Duke of Orsuna, Spain.

"The Mater Dolorosa," . . . . . *Titian*

With hands clasped, contemplating the dead body of her Son.

"Santa Rosa de Viterbo," . *Diego Gonzales (1688)*

This painting was the property of the Convent of San Francisco, Madrid, Spain.

"Queen of the Rosary," . . . *School of Murillo*

The Mother seated, with the Child standing in her lap, holding out a rosary of pearl beads.

"Contemplation," . . . . . *Unknown*

The Mother contemplating the Infant Christ, asleep on the floor. This painting is remarkable for its powerful expression of sleep, as seen in the face of the child, and for its admission that its mother was a Jewess—a fact never expressed or indicated by the old painters.

"The Spiritual Marriage of St. Catherine," . *Al. Veronese*

A beautiful painting of the school of the "old Master."

"The Burial of Adrastus," . . . . . *Coch*

A Sepia, or water color, describing the touching ancient story of the burial of Adrastus and Polynites in the night time, (contrary to public edict), by their devoted sister, Antigoine.

"Isis as the Creator," . . . *Peter Paul Rubens*

Holding the egg under impregnation of the sun, which creates Horus, who was the second person of the Trinity of ancient Egypt.

"Ancient Egyptian Snake Charmer," . *Peter Paul Rubens*

"The Holy Family," . . . . . . *Unknown*

"Impersonation of Shakespeare's Puck," *Sir Joshua Reynolds*

This ideal has been preferred to another by the same artist, representing "Puck" as an elf seated on a toad-stool.

"The Last Parting of Venus and Adonis," . *Albano*

"Peace and Victory," . . . . *Tintoretto*

The first expressed by Belona's return and play with his children, the latter by the bird held by his wife.

"Diana, the Goddess of Purity and Chastity," . *Guido Reni*

Asleep in the forest, surrounded by favorites.

"The Judgment of Paris," . . . . *Unknown*

"The Child Prince." . . . . . . *Unknown*

Said to be intended to represent Alexander the Great, when a child.

"Portrait," . . . . *Unknown*

A Moorish Chief of old Spain.

"Constantine," . . . . *School of Raphael*

A very old sepia on Roman paper—a powerful picture of the battle of Constantine.

"An Allegory," . . . . *Titian*

A goddess full of earth-life holding a fluted falling pillar. "Fate" is the name giving to this old painting.

"Charity," . . . . . . *Guido Reni*

"Vargas Machuca," . . . . . *Unknown*

A full life-size portrait of a famous Spanish fighter who rose to great distinction solely by reason of his physical strength, and well known in Spanish history as "Vargas Machuca" (the Pounder.)

"The Holy Family," . . . . . *Unknown*

A very old Convent picture.

"Family Portrait," . . . .

Claimed to be of Velazques, wife and son, painted by himself.

"The Holy Family," . . . *Correggio, or his School*

"A Young Girl Knitting," . . . . *Mieres*

On copper. This and some other paintings in this collection are so highly finished that they improve by using a magnifying glass to view them.

ENGRAVINGS.

"GARRICK AND MISS BELLAMY," as Romeo and Juliet.

"THE FLIGHT INTO EGYPT."

"POLYCRATES," a tyrant of the Island of Samos, nailed to a cross, by order of the treacherous Orætes, King of Persia.

"RAPE OF THE SABINES."

"BACCHANALIAN FEAST."

"GARRICK'S FINAL DEPARTURE FROM THE STAGE."

"MIERES' FAMOUS PAINTING OF A YOUNG GIRL KNITTING."

"REYNOLDS' PORTRAIT OF EDMUND BURKE."

"ROMNEY'S PORTRAIT OF EDMUND BURKE."

"MRS. FAWCETT ON THE STAGE."

"CLEOPATRA," by Guido Reni.

"REYNOLDS' PORTRAIT OF OLIVER GOLDSMITH."

"REYNOLDS' PORTRAIT OF SHERIDAN."

"MISS BRUNTON ON THE STAGE."

"JOHN KEMBLE ON THE STAGE."

"THREE SKETCHES."

"MISS MELLON" as 'Mrs. Page.'

"MRS. SIDDONS."

"MRS. FAWCETT" in 'King John.'

"GARRICK" as 'King John.

"INFANT HERCULES."
"JOHN KEMBLE" as 'Richard III.'
"MRS. YATES" as 'Pensoroso.'
"GARRICK" as 'King Lear.'
"PORTRAIT OF RICHARD BURKE."
"THE ELDER KEAN" as 'Brutus.'
"GARRICK" as 'Abel Drugger.'
"GARRICK IDEALIZED."
"MRS. SIDDONS" as 'Isabella.'
"PORTRAIT OF MISS O'BRIEN."
"PORTRAIT OF PEG WOFFINGTON."
"MRS. FARRON" as 'Hermoine.'
"REMBRANDT AND HIS WIFE."
"BURTON" IN THE CHARACTER OF "FAGE."
"APOTHEOSIS OF GARRICK."
"GARRICK BETWEEN COMEDY AND TRAGEDY."
"MRS. FARRON AND MR. KING ON THE STAGE."

PAPER IMPRINTS.

"THE EXACT IMPRINT OF THE MEMORIAL STONE TO ALEXANDER THE GREAT.

This is a public proclamation written upon stone, reciting, among other events, what is indicated in pencil at the foot of the imprint, that the great Alexander (not to be outdone by Cyrus) restored to the churches of Egypt the property of which they had been previously plundered, etc. The translations of all these imprints are no longer impossible, for there are persons who have learned to read them, readily and accurately, as though written in a familiar language.

"EXACT IMPRINT OF THE TANIS STONE."

The Rosetta stone, (as those versed in antiquarian lore are aware,) is now in the British Museum, in London, and afforded the means of learning to read the ancient hieroglyphics of Egypt. It is well known that all the ancient public laws of Egypt were engraved upon stone and made known to the people by placing these records in public places. About twenty years ago another of these records was found at the village of Tanis, below Cairo, and hence bears the name of that place. Like the Rosetta stone, it is of the Greek epoch in Egypt, and is written in the same three languages. At the top it is in hieroglyphics, then follows the Demotic, which was a reform language, partaking of both hieroglyphic and Greek, and lastly follows Greek, which some of our scholars in that language ought to be able to read. The obscure spots are owing to defects in the stone, which, on the whole, is more perfect than the Rosetta Stone. This stone affords competent proof of one of the most interesting customs of the ancient Church of the Egyptians, who were conceded to be the most pious people of the ancient world. It is proof also that the religious practice of canonization had prevailed in Egypt centuries before the coming of our Lord. On this stone is recited a decree of the assembled bishops of the ancient Egyptian Church, authorizing all, who chose, to pray not merely to male humans but also to females in the celestial worlds to intercede in their behalf for heavenly favors, and authorizes the image of the departed chaste and pure young girl, Berenice, to be placed upon all the altars of Egypt, as a proper intercessor to be prayed to in their behalf.

"IMPRESSIONS FROM THE WALLS OF ANCIENT EGYPTIAN TOMBS."

These impressions are of the four walls of a tomb, and can be read by any person having a taste for the study of hieroglyphics, for they express their meanings clearly. They show how the dead, for whose spiritual dwelling-places tombs were made until they could pass from "the undergrounds," were waited upon in their material lives, and what they did or had done for them while on earth. Among them the custom was not neglected to over-praise rather than detract from the good name of the dead. The image of the dead one himself, before a table for sacrifices, is represented at the end of one of the impressions, showing that he was attentive to his religious duties. In their rituals the Egyptians recited aloud whatever acts of their dead ones might make merit for them in the spiritual worlds, respecting which they entertained no doubts, and they claimed to hold them in constant and familiar relations. The Hebrews did the same, for they were educated, in the person of Moses, "in all the learning of the Egyptians."

BRIC-A-BRAC.

ANTIQUE EGYPTIAN LADY'S BROOCH OR BREASTPIN.

Unique, and of great value as an antiquity. It once belonged to the famous Egyptologist, Doctor Professor Henry Brugsch Bey.

A LARGE CROSS OF PURE GOLD, EMBOSSED,

Made to order by Hindoo goldsmiths in Cashmere.

A PAIR OF VERY SMALL ANCIENT EGYPTIAN CAMEOS.

One, the face of a woman, the other the face of a man. Discovered in an ancient tomb in Egypt.

A BEAUTIFUL IVORY-CASED COMPASS.

A MAGNIFICENT DOUBLE-ROYAL CASHMERE SHAWL,

Of a finish and value rarely seen in the United States. It is said that there is but one other in the world of the same pattern. It was made in Cashmere, and contains three years of actual labor upon it.

A BEAUTIFUL WHITE CASHMERE SHAWL,

With a border of Cashmere roses, having both sides exactly alike. This was a rare and costly article, and was represented by the exhibitor to be of the extreme fineness of those woven in the famed Cashmere. It was valued in that country at 4,000 rupees.

FIVE SAPPHIRES IN A RING, OLD AND UNIQUE SETTING,

Made by Siamese jewelers at Chantaboon, Southern Siam, Asia.

NINE RUBIES,

Obtained at the mines of the Hill of Precious Stones, near Chantaboon, Southern Siam, Asia.

A COMPLETE TRAVELLER'S BAROMETER, WITH A THERMOMETER ON ITS FACE.

Very heavy solid silver case, gold lined and chased on the outside.

A UNIQUE VENETIAN CHATELAINE.

An elaborate old jeweled, enameled, embossed, heavy chain with a watch in the center of a pure crystal ball which magnifies the face and the works.

THREE DIAMONDS,

Set in enamel and gold.

EIGHT BLUE SAPPHIRES.

TEN RED SAPPHIRES.

A PAIR OF CROSSES OF PURE GOLD, EMBOSSED,

Made by native jewellers in Delhi, India.

LADY'S BREASTPIN.

A beautiful amethyst, unique setting, in pure pearls and filagree gold, made by native jewellers in Delhi.

A LADY'S UNIQUE AMETHYST BREASTPIN,

Set in pure gold, filagree work, by native jewellers in Delhi.

A LADY'S GOLD BREASTPIN,

Exhibiting the work of the native jewellers of Java, East Indies.

ONE GARNET AND ONE RED SAPPHIRE.

TWO LARGE BLUE SAPPHIRES.

ONE LARGE CAT'S-EYE SAPPHIRE.

A DARK HEAVY SILK SHAWL,

Woven at Delhi, after the style of those made in Cashmere. A beautiful specimen.

AN INDIA SCARF,

Of red silk and gold, and a Spanish red scarf, made in Old Granada; also, one piece of Persian cloth.

AN ENTIRE PIECE OF DARK GREEN WATERED SILK,

Woven by natives in Persia, double width, and extremely rich and heavy.

LIST OF SMALL PAINTINGS BY LIVING HINDOO ARTISTS.

A HINDOO YOUNG GIRL, showing costumes.

A HINDOO YOUNG GIRL, different costume.

A HINDOO YOUNG GIRL, still different costume.

THE FAMOUS KOOTAB PILLAR AND GREAT ARCH,
near Agra, India.

INTERIOR OF GOLDEN PALACE OF FORMER KINGS OF DELHI,
painted in the rooms.

THE HALL OF THE FAMOUS PEACOCK THRONE,
in same place.

THE CHURCH OF THE SHIEKS,

In white marble and gold, as shown in the painting, made on the spot. It is at Umritzer in the Punjaub, and is, perhaps, the most exquisite little church edifice now in the world.

RELICS OF ANCIENT CHALDEA, BABYLON, ETC.

LEAF OF AN ANCIENT BABYLONIAN BOOK,

Written on a mould of clay and afterwards baked like a brick. This was their mode of making books, perpetuating writings, law, etc.

DIFFERENT FORMS OF SIMILARLY WRITTEN LEAVES, OR BOOKS, IN POTTERY.

The writings are perfectly plain.

TWO GENUINE AND COMPLETE "ANCIENT BRICKS," TAKEN FROM THE WALLS OF ANCIENT BABYLON,

More perfect specimens do not exist The names of the Kings of the different reigns in which they were made are as plain and readable as they were when they were first burnt.

A POLISHED STONE, ABOUT THE SIZE OF A HUMAN HEAD,

Covered with inscriptions never yet interpreted. The writing is fine and exquisitely engraved. It is unquestionably a record of great antiquity, and may prove to be of the very highest interest and historical value. It appears to have had one side broken off.

A HEAVY STONE CORNER OF SOME ANCIENT STRUCTURE,

At Nimroud, below Nineveh, covered with deep-cut cuniform writing.

PIECES OF STONE,

Containing genuine ancient cuniform writing.

A STONE ORNAMENTATION,

Obtained at ancient Persepolis. On the imprint above the Tanis stone may be seen the same figure, which appears to have been as common on the religious temples of Persia as on those of Egypt.

SAMPLES OF ANCIENT ASSYRIAN DISHES,

On which writings were inscribed with a hair brush or pen.

PART OF AN ANCIENT IMAGE FROM THE RUINS OF PERSEPOLIS,

Showing the ancient mode of dressing the hair and beard, and also the style of Persian sculpture of the days of Cyrus.

THREE SAMPLES OF ANCIENT CERAMICS,

Art of making vessels of clay in common use by the Babylonians.

THE WATER VESSEL OF BAKED CLAY,

In common use to-day in Egypt and many parts of Arabia, from the Tigris to the Nile. The clay being very light and porous, if filled, placed in a draft in the shade, and covered with a linen cloth, it makes the water cool. The vessels are only for domestic home use; traveling tribes do not use them, being too light and brittle for rough usage.

ANCIENT EGYPTIAN SEALS AND CYLINDERS.

COLLECTION OF EDWIN DEAKIN.

PAINTINGS.

SUNDAY MORNING.
THE CHOIR OF WESTMINSTER ABBEY.
MOUNT SHASTA.
NOTRE DAME.
THE MILL AT REST.
DONNER LAKE.
CHURCH PORCH.
OLD PARIS.
JOB'S PEAK FROM LAKE TAHOE.

COLLECTION OF F. MARION WELLS.

STATUARY.

CITY BELLE.
CHARLES DE YOUNG.
GERARD WINANS.
RUSTIC BEAUTY.
SHERIDAN, as "LOUIS XI."
PORTRAIT, (Possessor, J. M. Gitchell.)

PAINTINGS AND STATUARY

BELONGING TO

IRVING M. SCOTT.

This collection was for the most part entirely new to the people of San Francisco; for the owner had always refused to permit it to be seen in a fragmentary condition. In the judgment of those who are competent to form opinions on the subject, it is remarkably well selected, and reveals in the owner a pure standard of artistic sympathy and a broad and universal taste for whatever is meritorious. There are specimens of the leading schools of the chief art countries, some of which are from the easels of the princes of foreign ateliers: and others have great merits, which have been recognized by painters and by critics, but are unknown to the mass of picture-buyers. The collection is especially rich, however, in American pictures, and more particularly in the works of local artists.

The Directors are happy in the thought that few will be able to observe the paintings of Tom Hill and of Jules Tavernier (a pupil of F. Barrais, Paris), without strong feelings of gratified pride at the knowledge that the creators of these works of genius are of us, dwelling in our midst, and known to us as thorough Californians. The reaction that has taken place of late years in the affairs of this beautiful State, the depreciation in value of the Comstock lode, the diminished immigration, the departure of rich men (enriched here) to other localities, the disastrous fall of real estate, the squabbling of aspirants for office and the interested mouthings of demagogues, have had their influence abroad. It cannot be doubted that outsiders have not the same high regard and admiration for California that was once universally entertained. But it is to be hoped that Californians will be true to themselves, and will not abate one jot of their pride in their State or their belief in its superiority. So long as we have such artists as are here represented, and patrons so liberal and so discriminating as the one to whom these works of art belong, Californians will be justified in believing that here is the future "City Beautiful" of the United States, and here is the predestined centre of American art.

PAINTINGS.

"Pollard Willows," . . . . . . Julien W. Rix,
San Francisco.

The latest work of this very promising young artist, whose poetic temperament and sense of color give a special value to his works.

"Antony and Cleopatra," . . . . J. H. Dolph, N. A.
New York.

An excellently-painted bit of animal life, representing a cat and dog reposing in loving harmony upon one cushion. Mr. Dolph is one of the leading animal painters of New York.

" Normandy Horses," . . . . . Emile Normsnd,
Paris.

A little landscape of French scenery along the river Seine, introducing the huge horses commonly known as Norman.

" Game," . . . . Jan Weenix, [1644-1719,]
Amsterdam.

This very famous painter of still life was the son of Jan Baptist Weenix, an artist of equal, perhaps superior reputation. The specialty of the son was in the representation of dead hares and rabbits, to which he often added birds and other game. His works are at the Louvre, the Hague, and the galleries of Amsterdam, Berlin, Madrid and London.

" Chicory Girl." . . . . . . Virgil Williams, N. A.
San Francisco.

A pleasing bit of Roman life, reproducing the picturesque market, the sunlight, and the architecture where still lingers the spirit of the Renaissance. Mr. Williams is Director of the San Francisco Art School and Academy of Design

"A Sure Thing," . . . . J. G. Brown, N. A.
New York.

A strongly-painted, realistic scene. Mr. Brown is by birth a Scotchman, and was a fellow-student with Richardson and Pettie, the chiefs of that school of royal academicians who uphold the traditions of Wilkie, one of the very best among English artists.

"Cattle Nooning," . . . . H. Savry.
Haarlem.

The forms of the cattle are drawn with great accuracy and considerable spirit, and the artist has thoroughly succeeded in giving the warm, slumberous atmosphere of European summers.

"Gipsy Tent." . . . . A. Van der Venne.
Munich.

A landscape of the old Munich school in the days before Piloty and when the influence of the Achenbachs of Dusseldorff made itself felt over the whole realm of German art.

"The Broken Bridge," . . . . Jules Tavernier. San Francisco.

A vigorous attempt to render the sombreness of moonlight.

"Dress Parade." . . . . . J. G. Brown, N. A. New York.

This is acknowledged by all competent critics to be the masterpiece of the artist. The strength and skillfulness of the handling will commend it to the connoisseur, whilst all who see it will be impressed by the rare power of individualization shown in the faces. Mr. Brown has undoubtedly made the study of the street Arab of New York his own, and has received from French critics the warmest encomiums for the originality and humor which he has shown in representing them. His works are universally sought after, and command very high prices.

"Fish and Vegetables," . . . . Samuel M. Brookes San Francisco.

This picture is one of the very best specimens of this artist, whose reputation extends far beyond the sphere of his labors. An excellent work by him of California Salmon is in Bierstadt's studio in New York, and never fails to attract the attention and the admiration of every visitor. Seldom has Brookes been so successful in the grouping and composition of his pictures as he has been in this.

"Yosemite Valley, Early Morning," . . Thomas Hill, San Francisco.

One of the latest works of this gifted artist, the only one of all the landscape painters who has comprehended thoroughly the charms of Californian scenery, or who has succeeded in rendering the majesty of the Yosemite Valley. In this picture El Capitan looms up like the gigantic mass that it truly is, and the redwoods are painted with a *verve* and *brio* peculiar to Tom Hill. The distance is full of atmosphere and of fine gradations; in a word, the picture is fully worthy of a man whose reputation is American, although California can claim him as a local artist.

"Peasant Pilgrims to St. Peter's, . . Virgil William, N. A. San Francisco.

A very large and important work containing numerous characteristic figures, and a superb landscape that reveals the great dome of St. Peter's surrounded by the splendors of an Italian sunset.

"Mt. Lyell. Autumn." . . . . . William Keith, San Francisco.

"The Golden Gate. Winter. . . . William Keith, San Francisco.

Pensive," . . . . Wm. A. Bouguereau, Paris.

This picture, by one of the leading artists of modern times in France, represents a young girl knitting mechanically, whilst her pensive thoughts are far away. The drawing is at the same time vigorous, correct and graceful, and the handling is deserving of the highest praise.

Following is the record of Mons. Bouguereau: Pupil of Picot; Prize of Rome, 1850; Medals 1855, 1857 and 1867; Chevalier of Legion of Honor, 1859; Member of the Institute, 1876, Officer of the Legion of Honor, 1876; Medal of Honor, Exposition Universal, 1878.

"Leaving Home," . . . . . . W. Roegge, Dusseldorf.

One of the examples of the renewed strength which has come to Dusseldorf. The picture, representing a young German girl leaving her mother to go out to service, is noteworthy for the quiet strength of the coloring and the admirable arrangement and gradation of the lights. This is a very good specimen of the school.

"The Double Indiscretion," . . . . Michis, Rome.

Lady leaves letter in dress; maid shows to servant. This is the work of a young and rising Roman artist who is rapidly coming to the front rank in spite of the fact that he has renounced the Hispano-Roman school of Fortuny, and has sought inspiration in the works of Austrian *genre* painters. The composition is good, though subdued in tone, and the figures are admirably drawn and full of life and individuality.

"Mt. Tamalpais. Spring," . . . . William Keith. San Francisco.

"Mt. St. Helena. Summer," . . . . William Keith, San Francisco.

"Waiting for Montezuma," . . . Jules Tavernier, San Francisco.

The struggling remnant of a civilization that has reached its last stand is typified in the ruined buildings of these Aztec monuments. The picture represents an ancient Arizona town now sparsely inhabited by the remaining few of Aztec origin, who, true to the traditions and rites of their ancestors, have with their solemn custom assembled upon their house tops, lighted their sacred fires, and stand patiently awaiting the coming of their Messiah, who shall return with the rising sun to them. This is one of the most poetical and beautiful of the Aztec rites, and is solemnized yearly with the return of the young summer in June. Wherever exhibited this picture would rivet the attention of all observers for its intrinsic merits.

"The Bursting Bomb," . . . . Adolph Schreyer, Frankfort-on-the-Main.

A characteristic painting by Adolph Schreyer, one of the leading artists of France. He is famous for his picturers of Arab warriors mounted on their superb horses, and this is a very good specimen of his style. He aims at homogeneousness of tone rather than at local truths; and at general luminousness rather than the strength of contrasted light and shade. He is an impressionist of his own school.

"Fruits," . . . . . . Mrs. William Keith. San Francisco.

A very pleasing and well-painted bit of still life, by the wife of the talented artist, so well known in this city.

"California Wild Flowers," . . . . Mrs. William Keith, San Francisco.

"The Marguerite," . . . . . . Ernest Narjot, San Francisco.

A scene between two lovers in which a serious doubt is entertained as to the sincerity of *his* love. The face of the inamorata is painted with considerable delicacy, and the figure is well drawn.

"The Endangered Luncheon," . . . . Julius Hintze.

This picture represents a boy in charge of a comfortable lunch basket, chased by a flock of geese who come waddling up to attack the lunch and its bearer. A pretty girl is coming to the rescue.

"Grandmother's Quilt," . . . . E. Wood Perry, N. A., New York.

A good specimen of Perry's realistic New England pictures.

"First Up," (Candle Light,) . . . . S. J. Guy N. A. New York.

This artist is one of the leaders among New York painters. His skill in handling is something marvelous; and were he as strong in composition as he is in painting, he would undoubtedly be the American Meissonier. This picture of the young girl making a fire in the stove by the light of a candle, is far superior to any thing ever painted in that line by Van Schendel.

"Love Making," . . . . . . Albert Edelfelt, Helsingfors, Finland.

A remarkably strong and characteristic work. Whether we regard the mere handling, or the coloring, or the composition, or the light, we must admire it. The rendering of textures is fine, and the faces are well painted, more especially that of the young girl. Albert Edelfelt is a pupil of Baron Leys.

"Alsace," . . . . Thompson, Paris.

This picture represents a young girl looking out of a window. The room in which she is appears to be the sitting room of an old farm-house.

"A Glimpse of Monterey Bay," . . . Raymond D. Yelland, San Francisco.

Some very strong rock painting was noticed in this work, which was the first important picture by this laborious and conscientious artist, who has made great and continuous progress in the congenial atmosphere of California.

"Duet of Love," . . . . . . Jean G. Vibert, Paris.

Vibert received the medals of 1864, 1867, 1868 and 1878, and was made a Chevalier of the Legion of Honor, in 1870. In the estimation of all critics this artist outranks Gerome, and it was thought, at one time that the mantle of the aged Meissonier would fall upon his shoulders. This was before the apparition of Domingo. Vibert, however, ranks still as one of the greatest and most thoroughly reliable of the French *genre* school.

“Spiritual Consolation,” . . . . . Rosseller, Dusseldorf.

Another good specimen of the revived Dusseldorf school. The picture represents two young girls, probably orphans, receiving kind consolation from a venerable priest. It is a good bit of composition, close in arrangement and strong in execution, and the faces tell the story with considerable force.

“California Indians,” . . . . . C. Nahl [deceased,] San Francisco.

“Very Hot in Spain,” . . . . . Firmin Bouvy, San Francisco.

A humorous composition, painted with considerable strength.

“Child of Poverty,” . . . . S. Pilz, Munich.

A baby boy in a high chair is sharing a bun with a pet magpie, who would evidently fly up and take the whole, if it could. It is a pretty story, pleasingly told.

PHOTOGRAPHS.

“Two Scenes from the Life of the Saviour and Blessed Virgin.” . . . . Bonazza and Torcelli Venice.

A marble in the “Cappella del Rosario,” founded in 1571 to commemorate the victory of Lepanto.

STATUARY.

“The Washing Girl of Milan.”	F. Dal Negrof, Florence.
“Winter.”	Mercante, Carrara.
“Venus” (copy of,)	Canova, Florence.
“Ruth,”	Carrusi, Carrara.
“Rebecca,”	Carrusi, Carrara.
“Innocence,”	F. Dal Negrof, Florence.
“Summer,”	Nicoli Carlo, Rome.
“Fording the Stream,”	Fontana, Carrara.
“Flora,”	Carrusi, Carrara.

COLLECTION OF A. P. HOTALING.

Through the courtesy of Mr. A. P. Hotaling the Directors of the Mechanics' Institute Fair were enabled to place before the public his interesting collection. It contained many pictures by local artists of great merit, and had some military scenes which had all the evidence of realistic studies, and would convey the idea of the artist being an eye-witness to every scene he portrays.

The Wine Sampler	G. J. Denny
Love in a Cottage	Unknown
The Friend in Need	G. J. Denny
Game Piece	S. M. Brookes
Cavalry Raid, (Fort McAllister)	J. Walker
Meiggs' Wharf	Arriola
Le Gai Chasseur	F. Boffort (1714)
Autumn Scene, (San Mateo)	William Keith
Waiting for a Pilot	G. J. Denny
Rodeo	J. Walker
Scene in Sonoma Valley	William Keith
Mt. Hoffmann, (Headwaters of Merced River)	William Keith
King's River	William Keith
Venus and Cupid	Masson
Edwin Forrest	Stearns
Surveying Schooner "Marcy," off Mendocino	G. J. Denny
Sherman's March through Georgia	J. Walker
Sunset in the Cascade Mountains	J. W. Rix
Adobe Building, Livermore Valley	G. J. Denny
The Dead Soldier	J. Walker
Wreck of the "Brignardello."	Kidd
Inspecting the Cavalry Picket	J. Walker
Defending the Breach	J. Walker
Sunset, Black Point	Arriola
Yosemite	J. Walker
Testing the Wine	F. Boffort, (1714)
Battle of Missionary Ridge	J. Walker
Headwaters American River	William Keith

WORKS BY LOCAL AND OTHER ARTISTS.

Wood Scene	Nellie Hopps
Apostle St. Peter (Possessor, R. W. Silvey)	Unknown
Landscape	Roland Savary, Courtray, 1609
Winter Scene	Wm. Hahn
Driving Cattle to Market	Wm. Hahn
Tinie (Possessor, C. Waterhouse)	Samuel M. Brookes
Fruit Piece	Miss A. Rising
On the Way to Rome	Firmin Bouvy
Fruit Piece	Miss M. E. Jones
News from America	Wm. Hahn
Logging	Wm. Hahn
Portrait	Mrs. A. S. Hopps, (Pupil of Ed. Tojetti)
Portrait	Mrs. A. S. Hopps
President Garfield	S. W. Shaw
General Grant	S. W. Shaw
Holiday at the Convent	Firmin Bouvy
Portrait	Mrs. A. S. Hopps
The Lesson of Catechism	Firmin Bouvy
A Grey Day	R. J. Bush
On the Coast of Holland	H. Cleenewerck
The Miner	William Hahn
Briggs' Creek Canyon, Sonoma Co. (Possessor, L. D. Latimer.)	L. P. Latimer
On Russian River	L. P. Latimer
Summer Showers in Maine	William Keith
June in Maine	William Keith
Flower Girl	R. J. Bush
California Wild Flowers	Mrs. William Keith
Landscape	Miss Nellie Hopps
Adelaide Neilson, as "Juliet."	A. D. Cooper
Landscape	Miss Nellie Hopps
Hamburg	H. Cleenewerck
Portrait	Mrs. C. E. Danielwitz
Fruit Piece	John Van Zoon, Antwerp 1650–1703
Study from Nature	Mrs. C. E. Danielwitz
Neapolitan Boy	Mrs. C. E. Danielwitz
Fruit Piece	John Van Zoon, Antwerp, 1650-1703
Landscape	John Renier de Vries, Antwerp, 1700
Game and Vegetable Study	Mrs. E. J. Norton, Oakland

The Last Appeal (Embroidery.)	Miss Clayburgh
Flower Pieces	Miss T. K. Fowler, Napa
Portrait	Miss M. H. Jones
Lilacs and Roses	Mrs. J. Tuttle
Narciadina (Drawing.)	R. Cushing
Father's Blessing	H. Hellwegen
Rock of Ages	H. Hellwegen
Francesca and Ginevra	H. Hellwegen
Unexpected Caress	H. Hellwegen
Aurora	H. Hellwegen
Portraits (13.)	H. Hellwegen
The Poor Beggar Boy	H. Hellwegen
Rich and Happy	H. Hellwegen
Porcelain Painting	Mrs. L. C. Moore
Love's Labor Lost	H. Hellwegen
Portraits (2)	Mrs. A. Michalitschke
Portrait in Pastel	Mrs. J. Tuttle
Portrait in Pastel	Miss A. E. Wilson
Horse (Owned by A. S. Barney)	A. E. Wilson
Hound (Owned by Mrs. J. Tuttle)	J. T. Wilson
Photographs	A. J. Perkins

His exhibit runs from the smallest gems of plain photos up to life-size, retouched heads in India ink, water colors and pastel. His range of work also includes some very fine things in landscape, of equal excellence.

Penmanship	Heald's Business College
Rubens' (Owned by Mrs. Tuck, San Jose)	P. P. Rubens (1526)
Water Color Painting	J. Savannah
Spring	Mrs. A. Michalitschke,
Monogram	John B. Wilson
Foggy Morning in New York Bay (Owned by J. A. Irwin,)	W. G. Taylor
I Won't	Miss M. E. Stevenson
Sloop Yacht "Anna" (Owned by Commodore Allen)	Wilson G. Taylor
Cherries	Mrs. C. D. Farquharson
Water Color Painting	Mme. Albert Riccard
Mother's Love	Miss M. E. Stevenson
Water Color Painting	Mme. Marie Riccard
Young America	W. A. Coulter
Old Mill	Mrs. Tuttle
Love's Labor	Mrs. A. Michalitschke
Moses (Owned by Dr. Logan)	Miss Minnie Logan

This painting is copied from a medal unearthed in Jeruselum 50 years ago, and as far as known, no other one is in existence. On one side is the bust of Moses in bold relief, on the other the First Commandment is inscribed in Hebrew characters. The medal is in bronze, in a good state of preservation. On the side of the head appears the ram's horn and helmet and on the broad hem of his garment about the neck is worked the Hebrew characters for Moses.

HENRY CLAY (steel memorial tablet 20 x 30, done by order of Congress) Owner R. W. Silvey	C. Younglove Haynes, Philadelphia
PLATE DECORATION	Miss E. S. Ryder
FAN PAINTING ON SATIN	Mme. Albert Riccard
PORCELAIN PAINTING	Miss E. S. Ryder
BROOK TROUT	Mrs. R. D. Lennox
RUINED TEMPLE (SIAM)	Miss M. H. Jones
OIL PAINTING	F. A. Waterhouse
WATER COLOR	Miss E. S. Ryder
CUT FLOWERS	Mrs. W. R. Gallagher
DRAWINGS	Pupils of Oscar Kunath
PENMANSHIP AND DRAWINGS	Pupils of Carl Eisenschimel
PENMANSHIP	Pupils of Espina's Writing Academy
DIORAMA (GRUBER AND FEST'S,)	

This was a selection of four pictures from a series of Dioramic Paintings, representing the world's history, soon to be exhibited to the public. Mr. Fest, the well-known scenic artist, has been steadily engaged on the same for the past five years, his studies being taken from photographs, authentic drawings and paintings of the most noted places and events in history.

PORTRAIT	Mrs. E. M. Cook
MOUNTAIN SCENE	Mrs. E. M. Cook
PORTRAITS (3)	Mrs. E. M. Cook
THE PENITENT MAGDALEN	H. Hellwegen
PENMANSHIP	Pupils of Emmrich's Academy
PHOTOGRAPHS OF ARIZONA INDIANS	J. J. Cook
PORCELAIN PAINTING	Mrs. Helen Bradt
MILL ON THE THAMES (water color.)	Mrs. Wm. Armstrong
WILLOWS ON THE THAMES (water color)	Mrs. Wm. Armstrong
PAINTING ON SATIN	Mrs. Wm. Armstrong
PORCELAIN PAINTING	Mrs. Wm. Armstrong
PORCELAIN PAINTING	Mrs. L. C. Morex
DRAWINGS	Miss Emilie Baer
CRAYON PORTRAIT	Miss McDevitt
WATER COLOR PAINTINGS (3)	Geo. H. Burgess
TEMPERANCE LECTURE	Edward Edmondson
RAMBO AND CRAB APPLE	Edward Edmondson
CURRANTS	Edward Edmondson
CATAWBA GRAPES	Edward Edmondson
ECCE HOMO	Capt. H. Johnson, U. S. A.
MATER DOLOROSA	Capt. H. Johnson, U. S. A.
LIVE RABBIT	Edward Edmonson
PHOTOGRAPH (Railroad Scene)	J. S. Kirkland
PORTRAIT	Miss Addie L. Ballou
DRAWING OF S. S. "STATE OF CALIFORNIA," (Goodall, Perkins & Co.)	

EXHIBITION AWARDS.

By resolution the Board of Managers, on June 7th, decided to award but two Premiums this year: The Institute Gold Medal, for the best display of California-manufactured articles, and the Inventors' Gold Medal for the best recent Pacific Coast invention not heretofore receiving any award.

In accordance with the resolution, Committees were appointed to examine the various exhibits, which was done, and the medals awarded as recommended by the Committee.

A standing rule of the various Boards of Management has been, that in years when no general premiums were awarded, any exhibitor, desiring an examination made of his exhibit, could have the same, by first obtaining the consent of all exhibitors of articles of the same class, and notifying the Managers in writing of such desire, when a competent Committee would be appointed and their Report, suitably engrossed, given in lieu of the usual premium. In accordance with this rule, T. M. Antisell & Co. notified the Board that they would like an examination made of their goods, which was done, and a report made as herein published.

INSTITUTE MEDAL.

To the President and Board of Managers of the Sixteenth Industrial Exhibition.

Gentlemen:—We, the undersigned Jurors, appointed by your honorable body, to examine exhibits and adjudge to whom should be awarded "The Institute Medal," the premium for the best general display of California Manufactured Articles, beg leave to report:

That, after carefully examining the various exhibits, we have unanimously decided that the award belongs to Hon. W. T. Garratt, for his remarkably fine display of Brass Goods, Steam Pumps, Engines, Fire Apparatus, Bells, etc., which for variety, finish, and excellence of workmanship, we believe has been rarely excelled and seldom equalled at any exhibition, including the great World's Fairs.

Respectfully submitted,

N. W. Spaulding,
Charles M. Plum,
Joseph Britton.

INVENTORS MEDAL.

To the Board of Managers of the Sixteenth Industrial Exhibition :

GENTLEMEN:—Your Jurors, selected by you to award a Gold Medal "to the most meritorious recent Pacific Coast invention, which has not heretofore received an award," report that, after mature consideration of all the various exhibits intended for competition, they have selected the "outfit for handling headed grain in threshing," exhibited by Messrs. Jackson & Truman, and comprising a spreader, feeder, elevator, fork and a derrick, patented March 8th, 1875; Sept. 10th, 1877; Jan. 25th, 1881; March 22d, 1881; and we recommend that this collective invention, on account of the great improvement that it has made in the handling of grain, be awarded the Gold Medal.

Respectfully submitted,

SAMUEL H. WHEELER,
HENRY ROOT,
WM. H. BIRCH.

ANTISELL'S EXHIBIT.

To the Directors of the Mechanics' Exhibition of 1881:

GENTLEMEN:—We, the undersigned Committee, beg to report as follows:

We have examined the Pianos and Organs in the exhibit of Messrs. T. M. Antisell & Co., and find that the "Antisell," Upright and Square Piano have obtained their present high standing for their durability, volume of tone, good construction, and excellence of workmanship, together with artistic skill and ingenious combination of Mechanical devices for securing permanence in tune. We were also much pleased with the Antisell Organ, finding it a finer-toned and better-made instrument than any other, and, being a Californian manufacture, receives our warmest commendation, and is worthy of the highest award.

(Signed,)

JOHN M. STOCKMAN,
J. I. O'NEILL,
W. J. GURNETT,

Sept. 10th, 1881.

REPORTS
FROM
STANDING COMMITTEES
OF THE
INDUSTRIAL EXHIBITION.

BUILDING.

To the President and Board of Managers:

Gentlemen:—We herewith present our final report of matters in our department, and expenses incurred.

On examination, previous to the Fair, the building was found to be in moderately good condition, and but few repairs needed, principally for broken glass, and the partition for the machinery department, which but partially, accomplished the object for which it was designed, viz., to shut off from the main hall the noise of the mining machinery. As no more Fairs are to be held in the present Pavilion, we make no recommendations for the future, as it is expected, in the new building, most of the grievances complained of will be remedied. We have not found it necessary to purchase any lumber this year, and the expenses will be found to be less than at any former exhibition. They are itemized as follows:

For Carpenters, as per pay roll	$ 355 74
For Whitening and Kalsomining	19 00
For Glazing and Glass	25 30
For Wire for Elevator	3 75
For Hardware	44 71
Total	$448 50

James Drury,
Asa R. Wells,
J. R. Wilcox.

CIRCULARS AND CLASSIFICATION.

To the President and Board of Managers:

GENTLEMEN:—Your Committee on Circulars and Classification report that the usual circular containing a preliminary announcement of the holding of the Sixteenth Industrial Exhibition, was distributed throughout this and adjoining States. Besides this, your Committee has nothing of interest to report.

Respectfully submitted,

EDWIN FRETWELL,
GEO. H. HOPPS,
JAS. SPIERS.

SAN FRANCISCO, Sept. 27, 1881.

PRINTING AND ADVERTISING.

To the President and Board of Managers:

GENTLEMEN:—Your Committee beg leave to submit the following as a report of the transactions of this department of the Exhibition just closed. It has been the endeavor of the Committee to economize in every possible way consistent with the success of the Exhibition, contracts being made with such papers as it was deemed best to patronize. It was also thought best by the Committee to get local or editorial notices in the papers rather than large display advertisements, and it is believed to have had a beneficial effect on our receipts. Due credit should be given to the city papers for their very liberal course in permitting local items to appear in their columns without charge. All the necessary printing was done when needed. The following tickets were printed and turned over to the Ticket Committee:

2,515 Double Season Checks.
512 Single Season Checks.
505 Children's Season Checks.
4,523 Double Season Tickets.
1,014 Single Season Tickets.
6,037 Adult Single Admission Tickets.
1,509 Children's Single Admission Tickets.
250 Excursion Tickets.

The expenses of the Committee have been as follows:

Advertising	$1,164 50
Printing	870 25
Stationery	114 95
Making the whole amount	2,149 70

The sum of $204 should be deducted from the printing, from sale of catalogues, leaving $1,945 70 as the sum expended during and for the Exhibition.

Respectfully submitted,

GEORGE SPAULDING,
EDWIN FRETWELL,
RICHARD GRAY.

POWER AND MACHINERY.

To the President and Board of Managers:

Gentlemen:—Your Committee on Power and Machinery respectfully submit this account of the performance of their duties, as well as a statement of the condition the property placed in their charge:

The boilers and engine were found by them substantially in good condition, requiring but little expense to put them in running order. At the close of the Fair they are still in good condition. The main bearings of the engine will require re-babbiting before the commencement of another Fair, and the furnace doors require new casings and linings. The shafting, pulleys and bearings for same are all in good condition.

The main belts for engines, and belts for electric lights, have been taken off, rolled up and put in the store room till required for next Fair. The new pulley fly-wheels (2) made for the electric light engine have been stored ready for any suitable use. The machinery has been well taken care of by your engineer, Mr. Holmes, who has proved himself a very efficient officer.

The total expense of this department, exclusive of salaries, is $566 41, and that of last year $542 52. The amount paid this year for fuel was $301 80 which is less than last year, the amount being $368 65. This year we burned a considerable quantity of refuse wood, which accounts for the difference. The pulley fly-wheels for electric engine cost $74 68, and the balance of $189 93 is made up of oil, wash, packing, belting, repairs and little locomotive pipe fittings and sundry little things required by the department. The running expense of the department per day, deducting the cost of pulleys and belting from the $550 16, is, for fuel and incidentals $11 50; wages $7, running small locomotive, wages, alcohol and incidentals, $4 50; total per day, $23. We recommend that the fly-wheel and all small parts of engines, also the shafting, pulleys, hangers, and all iron work that may interefere in the removing of the building, be taken down and packed away carefully, until required for use in the new building.

Respectfully submitted,

James Spiers,
Samuel Dinsmore.
J. R. Wilcox.

RULES REGULATIONS AND AWARDS.

To the President and Board of Managers:

Gentlemen:—Your Committee on Rules, Regulation and Awards, have but little to report.

The Rules and Regulations adopted were similar to those of last and previous Fairs. There were no premiums excepting those of the Inventors Medal and for the Best General Display, the Jurors on which have presented their reports. As soon as the funds of the Institute will permit, we would recommend that a set of new dies, not so large as our last dies, and a little larger than the old ones, be made. The old medals are very insignificant in appearance, and the large ones, when made in gold or silver, cost too much. In order to economise expense in this department the Rules and Regulations of last year were adopted. The cost for making medals has not been ascertained, but the approximate cost of them and certificates will not exceed $100.

Respectfully submitted,

S. Dinsmore,
James Spiers.
J. A. Bauer.

TICKETS AND ADMISSIONS.

Gentlemen:—Your Committee on Tickets and Admissions respectfully report as follows:

The season tickets used was the identifying ticket of the Twelfth and preceding Fairs. A detailed accouut of the number sold is given in the Treasurer's Report. The usual number of vexatious disputes, as to the number of persons admissible on a double season ticket, took place this year, and will no doubt be a disagreeable feature of future Fairs as long as the double season ticket is used. We also think that special tickets to the Press should be discontinued.

The thanks of the Committee are tendered to the other members of the Board for kind assistance during the Fair.

Respectfully submitted,

Edward Fretwell,
David Kerr.

SUPPLEMENTAL REPORT.

Your Committee on Tickets and Admissions, in compliance with a resolution of the Board, present the following supplementary report, containing a brief statement of their views and ideas about season tickets.

The simple identifying card ticket in use this year we do not recommend for future use, as this ticket offers no check to repeating; and in the absence of any means of registering the admission on the ticket, the practice soon becomes general.

The coupon ticket in use last year effectually prevented repeating, and, with the identifying marks, made a very good season ticket. One drawback was that it was a very expensive ticket; another that it was not so handy and portable as the card ticket. A defect in working, noticed by your committee last year, was that, in quickly tearing off a coupon, the doorkeeper frequently tore off the corresponding coupon on the leaf below.

Your Committee would suggest that a card ticket, similar to the Oakland Ferry Commutation Ticket, with identification marks, and small squares around the margin for punching at each admission, seems to combine the advantages of each kind of season ticket heretofore used, being non-transferable, cheap and portable, and also offering an effective check to repeating. A ticket of this kind, or the coupon ticket of last year, your Committee recommend for the future.

Your Committee are thoroughly convinced that no special press ticket should be issued; each reporter should be furnished with a season check to be duly changed for an identifying season ticket, admitting only the person named thereon. This plan your committee think would prevent many acrimonious disputes and much annoyance to the doorkeepers.

Exhibitors' employees' tickets should be punched at each admission, and no employee admitted except on presentation of his ticket. All double season tickets and checks should have printed on the back a very distinct statement of the conditions under which the ticket is sold, and the rights and privileges conferred thereby, so that the inevitable disputes on these points may be as few as possible.

As to whether season tickets should be retained or abolished in the future your committee make no recommendation.

All which is respectfully submitted,

EDWIN FRETWELL,
DAVID KERR.

MUSIC AND DECORATIONS.

To the President and Board of Managers:

GENTLEMEN:—Your Committee on Music and Decorations respectfully report as follows:

The contract for furnishing the Music was given to Chas. Schultz and H. Von der Mehden for $458 per week; the same price paid as last year. The total amount disbursed for Music is $2,687 67. It was the universally expressed opinion of the public and the Press that the music was better this year than at any previous Fair of the Institute. The selections were so popular and the execution so masterly, that very often pieces were encored two and three times. We would recommend, to arrange the new Pavilion in such a manner that the noisy machinery be separated by a good solid partition from the main hall, so that the audience hears more of the music, which is no doubt the principal attraction to the Exhibitions, and less of the more useful but noisy ore stamps. The expenses of decorating this year amount to $371 06.

We remain respectfully,

J. A. BAUER,
A. W. STARBIRD,
G. H. HOPPS.

PRIVILEGES.

To the President and Board of Managers.

Gentlemen:—Your Committee on Privileges would most respectfully report that all matters in their department have been satisfactorily settled, the holders of privileges paying promptly; and no request for a rebate or return of money has yet been made—a fact worthy of note. Following is a list of privileges sold, and to whom:

Ciphers & Gendar, candy	$ 556 50
Geo. C. Thompson, soda	827 50
Vienna Bakery, ice-cream	775 00
Vienna Bakery, restaurant	200 00
Harry Bentham, wine room	400 00
Dewey & Co., printing	550 00
D. S. Ciphers, pop corn	251 25
Geo. C Thompson, cider	227 50
Shattuck & Fletcher, Japanese goods	25 00
D. M. Pidge, fans	25 00
J. H. Kruger, canes	25 00
W. Willmore, liniment	25 00
Miss Schafer, bouquets	15 00
Dr. G. G. Burnett, perfumery	25 00
A. G. Scott, polish	15 00
Dempster & Keyes, soap	25 00
—— Wood, lustre	10 00
	$3,977 75

All of which is submitted as a final report by your Committee.

David Kerr,
A. W. Starbird,
Columbus Waterhouse.

LOCATION.

To the President and Board Managers:

Gentlemen:—Your Committee on Location beg to submit the following final report:

The plans of the Pavilion building, as submitted by your Committee, showing some few changes in general appearance of the building, were adopted, and the floor space of the building divided and allotted in accordance therewith, and, as your Committee believe, gave entire satisfaction. The noisy mining machinery being enclosed in a room by itself afforded much satisfaction to all. Your Committee have incurred no expense except that for labor, which was included in the weekly pay-roll of regular employees. The matter of allotting space and locating exhibitors and privileges was left almost entirely with our able Superintendent, Mr. Gilmore; and so well did he conduct the matter that not one word of fault-finding came to the notice of your Committee. Respectfully submitted,

A. W. Starbird,
George Spaulding,
James Drury.

GARDEN.

To the President and Board of Managers:

Gentlemen:—Your Committee on Horticultural Garden would respectfully report that, on account of there being no premiums offered for plants, no display was given by the State Horticultural Society, we, for a small consideration to growers, made a display that equalled the preceding year. We would recommend that the necessary work be done in the garden, to keep plants in condition for removal to the new building. The expenses for the present Fair have been $730 80, of which $57 30 has been for fruit, $315 for calcium light and $98 for flowers.

Respectfully submitted,

Geo. H. Hopps,
C. Waterhouse,
J. A. Bauer.

GAS AND WATER.

To the President and Board of Managers:

Gentlemen:—Your Committee on gas and water submit the following as their final report:

Expenses.		
1,167,300 feet of gas at $3 per M.		$3,501 90
Labor, as per pay roll		397 75
Electric Light		315 00
Outside Lamps		4 50
Blacksmithing		11 25
Plumbers' and Gas-fitters' goods		27 08
Water, five and five-sixths weeks, at $100 per week		583 35
		$4,840 83
Less.—		
Rebate on gas	$583 35	
For gas used by exhibitors	20 04	
		603 39
Actual expenses		$4,237 44

The electric light used in the garden and at the entrances gave satisfaction, their improvement since the last Fair in steadiness and burning being very evident. We would recommend that as soon as convenient all of the gas and water fixtures now in the Pavilion be measured, counted and a correct inventory taken. A detailed statement of the consumption of gas each day will be made and published in the report. The thanks of the Board are due to W. H. Ohmen for use of engine used in running the electric light, and to W. T. Garratt for use of pumps used in forcing water back in the mains.

TABLE OF GAS CONSUMPTION.

Number of feet consumed, before opening		12,400
August	2	35,800
“	3	32,900
“	4	33,600
“	5	34,900
“	6	44,600
“	8	35,800
“	9	30,300
“	10	32,100
“	11	39,500
“	12	28,500
“	13	39,300
“	15	29,700
“	16	28,300
“	17	28,200
“	18	28,400
“	19	29,200
“	20	35,100
“	22	28,400
“	23	36,800
“	24	33,500
“	25	30,800
“	26	30,800
“	27	35,600
“	29	31,300
“	30	29,000
“	31	28,600
September	1	29,200
“	2	32,200
“	4	37,200
“	5	28,900
“	6	30,900
“	7	29,700
“	8	31,800
“	9	30,700
“	10	47,600
After closing		5,700
Total number of feet		1,167,300

Average amount of gas consumed per day, 33,351½ feet.

Respectfully submitted,

J. R. Wilcox,
Asa R. Wells,
Samuel Dinsmore.

ART.

To the President and Board of Managers:

Gentlemen.—Your Committee on Art would respectfully report that the present Exhibition fully merited the encomiums of the public. The generous contributions of our fellow-members and citizens generally gave us a full and ample display; the contributions of the Art School fully equalled their promises of the previous year, and the work showed a marked progress of our youths. We would recommend that the galleries of the new building be lathed and plastered, and roof lights be arranged on either side, as that will avoid discrimination in hanging, and guard against any damage by dust. The pictures were returned and hung in place without any damage. There was some expense in decorating this year that enchanced the general appearance. The total expenses were $1,291 68, an itemized account of which will be shown in the report of the Exhibition.

Respectfully submitted,

G. H. Hopps,
J. A. Bauer,
R. Gray.

ADDENDUM.

[The following exhibits were accidentally omitted in the alphabetical list of exhibitors.]

NEWELL, E. C.—The California Refrigerator.

This was an exhibit of three refrigerators, designed, according to size, for family and hotel use. The ice-chamber is so arranged that there is maintained a free circulation of dry air, keeping provisions cool and free from taint. The best material is used; they are finished in the highest style of workmanship and are an ornament to any room.

CALIFORNIA SCHOOL OF DESIGN.

Three hundred studies and drawings by the pupils. Virgil Williams, Director.

APPENDIX.

REPORT BY THE PRESIDENT

OF THE

MECHANICS' INSTITUTE.

SINCE my last report the Sixteenth Industrial Exhibition has been held, the report of various Committees submitted, and the result, as shown by the financial statement, is a net gain to the Institute of $22,269 69, a result most satisfactory, and in excess of anticipated profits.

The great need of the Institute owning the ground whereon the building for holding these Fairs could be erected has always been felt, and particularly so of late years, as unimproved lots of sufficient size were becoming very scarce, unless at a long distance from the central portion of the city.

The lease of the ground on which the Pavilion stood was liable to terminate at short notice, as it could be only renewed one year in advance. With this existing state of affairs, the Trustees decided, after careful deliberation, to purchase, if possible, a lot whereon could be erected a building suitable for Fair purposes, and also, if practicable, to contain rooms for the library, lectures, and all other purposes of the Society.

A number of pieces of property in various parts were offered to the Trustees, but the one that seemed the most available and suitable for the present and prospective uses of the Institute was the block bounded by Larkin, Hayes, Polk and Grove streets, held in trust by Most Reverend Archbishop Alemany. The price demanded for the property was $175,000.

On December 15th, 1880, at a special meeting of the members of the Institute, it was decided to buy the lot, and on December 15th the purchase was made, $5,000 being paid as a deposit, to be returned if the title proved unsatisfactory, and sixty days time was allowed to pay the balance due.

In January, of the present year, all matters pertaining to title having been found satisfactory, $100,000 for three years was obtained from the Hibernia Bank by a loan on the property, bearing interest at the rate of 6¾ per cent. per annum, the bank paying the mortgage tax. More money being required, a special meeting was called on February 12th, and the Trustees authorized to mortgage the Library property on Post street to raise money to help pay off the indebtedness incurred in the purchase of the lot, which was done by borrowing from the San Francisco Saving and Loan Society $65,000 for two years, with interest at the rate of two-thirds of one per cent. per month, payable monthly.

Financial matters, as regards the purchase of the property, having been arranged satisfactorily, the erection of a new building was decided upon, and the plans submitted by Curlett & Eisen, architects, were adopted September 16th, and bids for the construction solicited. On October 14th the bids, eleven in number, were opened and found to range from $51.500 down to $32,000 (including the old Pavilion). At the last price the contract was awarded to Moore Bros., the old Pavilion to be removed by January 1st, and the new one erected by February 10th. The Trustees expect to obtain sufficient money to complete the new building by loans without interest from our public-spirited citizens. A number have already come forward, and there is no doubt but sufficient funds can be obtained in this manner, as these Fairs are a source of direct pecuniary profit to many branches of business and of general interest to the city.

The location now permanently secured, is probably the best that could be selected, even if a choice of all the land in the city could have been had. It soon will be the centre of the town, and the increased value of the land is already a considerable sum. A few more years of success and the management of the Institute will be enabled to carry out in full the designs and objects of the Association, by the addition of a museum, the formation of classes and the delivery of lectures for tuition, a cabinet of Scientific apparatus, and such other objects as will make it equal to the best of the older States.

The Seventeenth Industrial Exhibition will be held in 1882, and it is hoped the result will be the gain of a sum that will materially reduce the indebtedness of the Institute.

P. B. CORNWALL,
President.

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Mechanics' Institute
Report of the
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